COLLABORATION MODEL BETWEEN PTKI AND DUDI FOR QUALITY AND EQUALITY IN EDUCATION 2045

Dini Pepilina[1], Fauzi[2], M. Zulfikar Sulkhi Aunillah[3]
[1]Sekolah Tinggi Ilmu Tarbiyah Tanggamus; Indonesia
[2]Institut Bakti Nusantara; Indonesia
[3]Universitas Al-Azhar Kairo; Mesir
Correspondence Email: dinipepilina@stittanggamus.ac.id

Abstract	This study aims to formulate a strategic collaboration model between Islamic Higher Education Institutions (PTKI) and the Business and Industrial Sector (DUDI) to improve the quality and equity of education toward Indonesia's Golden Vision 2045. This research employs a library research design with a descriptive qualitative approach by analyzing 20 selected scientific articles, academic books, and policy documents published between 2021 and 2025. The data were collected through literature screening and purposive selection based on thematic relevance to PTKI–industry collaboration. Data analysis used content analysis to identify patterns, themes, and conceptual linkages. The findings show that PTKI–DUDI collaboration can be implemented through joint curriculum development, structured internships, research collaboration, entrepreneurship incubation, digital learning expansion for 3T regions, scholarship provision, and talent recruitment. This collaboration not only strengthens graduates' employability but also promotes equitable access to high-quality education while maintaining the values of moderate Islam. Therefore, the PTKI–DUDI collaboration model has significant potential as a strategic instrument to support the Sustainable Development Goals and Indonesia Emas 2045.
Keywords	PTKI, DUDI, Education quality, Equity, Indonesia 2045.

INTRODUCTION

Education is one of the main foundations for building a nation's civilization. Throughout history, a country's progress has been determined by the extent to which its younger generation possesses the quality of education needed to address the challenges of an ever-changing and dynamic era (Ridge & Statile, 2024). In Indonesia, educational development is not merely an effort to educate the nation's life as mandated by the 1945 Constitution, but also a national strategy to realize the long-term vision of Golden Indonesia 2045. This vision aims to establish Indonesia as an advanced, competitive, and socially just nation by the time it reaches its centenary of independence (Teemant et al., 2021). To realize this great ambition, education is required not only to produce a generation that is academically intelligent but also one equipped with life skills, 21st-century competencies, and readiness to enter a highly competitive workforce and global society (Mustoip et al., 2023). Therefore, education in Indonesia must continuously transform to remain relevant to the needs of the times, including adapting to technological advancements, socio-economic changes, and the increasingly complex dynamics of the business and industrial world.

One of the key actors in the Indonesian higher education ecosystem is Islamic Religious Higher Education Institutions (PTKI), which are spread across various regions and have long served as pillars in shaping a religious, character-driven generation that contributes to the development of science and society (Gan et al., 2023). However, PTKI faces significant challenges in the era of globalization and the Industrial Revolution 4.0, and even as we move toward Society 5.0, where the competencies required by the workforce are no longer limited to mastery of normative knowledge but also include practical skills, innovation, creativity, and high adaptability (Ellis-Robinson & Coles, 2021). These challenges cannot be addressed through traditional approaches alone; instead, they require breakthroughs via more strategic collaboration models with the Business and Industrial World (DUDI). This ensures that PTKI graduates not only possess strong moral integrity and religiosity but also tangible global competitiveness (Fadjarajani et al., 2021).

The educational issues in Indonesia are not only related to quality but also to equity (De Bie et al., 2023). There is an educational gap between urban and rural areas, as well as between developed regions and the 3T (frontier, outermost, and least developed) regions. Data from the Ministry of Education, Culture, Research, and Technology for 2023 indicate that the Gross Enrollment Rate (GER) for higher education in urban areas reached 36.31%. In contrast, in the 3T regions, it was approximately 19.57%. Furthermore, several 3T regions have an Education

Development Index (EDI) below the national average due to limitations in digital infrastructure, internet access, and a limited number of educators. This data highlights the need for a collaborative model between PTKI (Islamic Higher Education Institutions) and DUDI (the Business and Industrial World) to enhance digital learning and expand equitable access to education in underdeveloped regions, thereby supporting national educational equity (Kemendikbud Ristek, 2023).

If left unaddressed, this gap can hinder the realization of social justice and equal opportunity. Consequently, Indonesia's demographic bonus could become a burden rather than a strength (Setianto, 2021). Therefore, a collaborative model between PTKI and DUDI is not only crucial for improving the quality of graduates but also for expanding educational access and equity. Through collaboration, PTKI can open opportunities for students from diverse backgrounds to gain learning experiences that meet industry standards, whether through internships, curriculum alignment, applied research, or entrepreneurship development programs. This aligns with the government's Merdeka Belajar Kampus Merdeka (MBKM) policy, which provides students with opportunities to learn outside campus and interact directly with the real world. Thus, PTKI-DUDI collaboration can be a strategic instrument for realizing inclusive, equitable, and quality education, while also supporting the achievement of the Sustainable Development Goals (SDGs), particularly in the areas of quality education and equal opportunity (Ushad et al., 2024).

The development of digital technology, artificial intelligence (AI), and automation across various sectors demands that the younger generation possess new capabilities different from those of previous generations (Duncan-Andrade, 2022). The business and industrial world now places greater value on problem-solving, communication, collaboration, critical thinking, and innovation skills, all of which are integrated with digital literacy (Lett et al., 2022; Bjelobaba et al., 2023). As part of the higher education system, Indonesian Islamic Higher Education (PTKI) is required to prepare graduates who meet these demands. Without adapting the curriculum, learning methods, and industry networks, PTKI graduates risk becoming irrelevant to the job market's needs (Alam & Mohanty, 2023). Collaboration between PTKI and the Business and Industrial World (DUDI) has a strong legal basis within the national education system. Law Number 12 of 2012 concerning Higher Education, Article 35, affirms that the higher education curriculum must be based on competencies relevant to the needs of the world of work and industry. Furthermore, the Minister of Education and Culture Regulation Number 3 of 2020 concerning National Higher Education Standards and the Minister of Education and Culture Decree Number 754/P/2020 concerning Higher Education's Key

Performance Indicators (IKU) stipulate that universities are obligated to involve industry in the learning process, including internships, research, and graduate recruitment.

The Merdeka Belajar–Kampus Merdeka (MBKM) policy also affirms that every higher education institution must open avenues for collaboration with industry to enhance student employability. Therefore, the integration of PTKI–DUDI is not merely an academic need, but a regulatory mandate in the effort to improve the quality of higher education (Ministry of Education and Culture, 2020; Law No. 12 of 2012). This collaboration model can be realized in various forms, ranging from joint curriculum development and structured internship programs to collaborative research, scholarships, talent recruitment, and the development of campus-based innovation centers and business incubators. Thus, PTKI (Islamic Religious Higher Education Institutions) are positioned not only as religious education institutions but also as centers of excellence that produce superior human resources, with noble character, and the ability to compete at a global level.

The urgency of building this collaboration is also increasingly evident when observing global dynamics that point towards economic integration, international labor mobility, and the need for cross-disciplinary competencies (Germain, 2022). Indonesia must ensure that its education system does not fall behind other countries, particularly in preparing for the golden generation of 2045. Without educational transformation, the demographic bonus, which should be an opportunity, could turn into a disaster, as a large number of graduates would lack relevant skills. Therefore, the government, PTKI (Islamic Higher Education Institutions), and DUDI (Business and Industry World) need to build a sustainable and mutually beneficial collaborative ecosystem. The government plays a role as both a regulator and facilitator, while PTKI serves as a provider of knowledge and character education. At the same time, DUDI acts as a user of graduates and a partner in shaping practical skills. Through this synergy, Islamic education in Indonesia.

Golden Indonesia 2045 requires a comprehensive education strategy, where collaboration between Islamic Higher Education Institutions (PTKI) and the Business and Industrial World (DUDI) is a key factor (Helena & Bagger, 2021). By integrating moderate Islamic values, an industry-relevant curriculum, and equitable access to education, Indonesia can produce a generation that is not only academically excellent but also character-driven, competitive, and capable of contributing to global development (Jagers et al., 2021). Therefore, research on collaborative models between PTKI and DUDI for educational quality and equity is highly relevant, strategic, and urgent to be studied in-depth. This research is a vital part of the academic contribution towards realizing the

grand vision of Golden Indonesia 2045.

Experts have widely discussed research on improving the quality of Islamic education and the benefits of cross-sector collaboration. For instance, Prastowo (2021) emphasizes that one way to enhance the quality of Islamic education is through strengthening the institutional capacity of pesantren (Islamic boarding schools) and madrasah (Islamic schools) by integrating a curriculum based on digital skills and adapting to Industry 4.0. Furthermore, Aderempas et al. (2025) reveal that equalizing educational infrastructure is an essential requirement for achieving quality and equity, which necessitates cross-sector collaboration to support the vision of Indonesia Emas 2045 (Advanced Indonesia 2045). This aligns with Lamadang's (2022) view, who emphasizes the importance of collaboration between education and the industrial world as a response to the shift in labor structure from a traditional model to a knowledge-based era.

Meanwhile, Ushad et al. (2024) in their research titled "Kansei Innovation for Shared Agroindustry" demonstrate that the application of an innovative human-centered design approach in educational and industrial collaboration can strengthen the creativity, innovation, and competitiveness of human resources, including within religious higher education. Furthermore, (Yantoro et al., 2022) in their study, Analysis of Jambi University's Early Childhood and Primary Education Program for a Global Competitive Generation, assert that improving the quality of education needs to be integrated with learning programs based on global competencies and strategic partnerships among stakeholders, including the government, universities, and the industrial sector.

Although previous research has emphasized the importance of educational transformation through collaboration, several critical issues remain that have not been comprehensively addressed. First, Islamic Higher Education Institutions (PTKI) still tend to be trapped in a traditional paradigm that emphasizes normative-religious aspects, making them less adaptive to the needs of the business and industrial sectors (DUDI). Second, infrastructure and resource disparities between urban areas and the 3T regions (frontier, outermost, and disadvantaged) result in unequal access to quality education. Third, the implementation of the Merdeka Belajar Kampus Merdeka (MBKM) policy in PTKI has not been optimal, particularly in integrating 21st-century skills-based curricula, such as digital literacy, entrepreneurship, and critical thinking. Fourth, the employability rate of PTKI graduates remains low due to a lack of practical industry experience. These issues highlight the gap between the ideal vision of national education and its actual implementation in the field.

Although previous research has highlighted the excellence of Islamic education, the

implementation of Merdeka Belajar, and the strengthening of both soft skills and hard skills, a significant research gap still exists. First, no study has specifically integrated the collaboration model between PTKI and DUDI as a strategy to improve quality and equalize access to education simultaneously. Second, previous research tends to emphasize only one aspect—such as local government policies, curriculum, or individual skills—without integrating all three into a comprehensive, collaborative framework. Third, the contribution of PTKI in supporting the Sustainable Development Goals (SDGs), particularly in the areas of quality education and equal opportunity, has not been thoroughly explored. Fourth, no study has explicitly examined the long-term role of collaboration between PTKI and DUDI in supporting the achievement of the Indonesia Emas 2045 vision. This is the research gap that this study aims to address.

The urgency of this research is extremely high, given the increasingly complex global challenges, including competition in the international job market, the development of artificial intelligence (AI), and the shift in labor demands from manual to knowledge-based sectors. Suppose Islamic Higher Education (PTKI) does not undergo immediate transformation through collaboration with Business and Industry (DUDI). In that case, graduates will fall further behind and be unable to compete at both national and international levels. Furthermore, the disparity in education quality between urban areas and the 3T regions (disadvantaged, frontier, and outermost) will further widen socio-economic inequalities. Therefore, this research is essential to provide recommendations for a collaborative model that not only supports the enhancement of students' competencies but also ensures equitable access to education for all segments of society.

The novelty of this research lies in the development of an integrative and adaptive PTKI-DUDI (Islamic Higher Education-Industry) collaboration model, which is also oriented towards the Golden Indonesia 2045 Vision. First, this model not only connects the academic world with industry but also integrates aspects of equitable access to education through digitalization and social inclusion. Second, this research positions PTKI not merely as religious education institutions, but as centers of excellence capable of producing graduates with global competencies based on moderate Islamic values. Third, the proposed approach is not limited to curriculum collaboration or internships alone but also encompasses entrepreneurship incubation, applied research collaboration, and a model for recruiting top talent. Fourth, this research presents a long-term perspective that links the role of PTKI in achieving the Sustainable Development Goals while supporting Indonesia's progress toward becoming a developed country by 2045.

This research aims to formulate a strategic collaboration model between Islamic Higher Education Institutions (PTKI) and the Business and Industrial World (DUDI) to enhance the quality and equity of education in support of the Golden Indonesia 2045 Vision. Specifically, this research seeks to: (1) analyze the relevance of the PTKI curriculum to the needs of the modern industry based on the digital economy; (2) explore mechanisms for strengthening both the soft skills and hard skills of PTKI students through collaborative programs such as internships, research collaboration, and entrepreneurship incubation; (3) formulate strategies for equalizing access to quality education in the 3T regions (disadvantaged, frontier, and outermost) through learning digitalization and industrial support; and (4) identify sustainable link and match patterns between PTKI and DUDI in improving graduate employability. With these objectives, it is expected that the resulting model will not only be conceptual but also practical and applicable.

METHODS

This study employs a library research method with a descriptive qualitative approach, relying entirely on the results of a literature review of various relevant scientific sources published between 2021 and 2025. Research data was obtained from 20 selected scientific articles, academic books, research reports, and higher education and industry policy documents related to the issue of collaboration between Islamic Religious Higher Education Institutions (PTKI) and the Business and Industry World (DUDI). These articles were gathered from various reputable databases, including Scopus, the Directory of Open Access Journals (DOAJ), and SINTA (Science and Technology Index), which the Indonesian Ministry of Education, Culture, Research, and Technology manages. The selection of these twenty articles was conducted purposively, considering the topic's relevance to the research focus, the novelty of the study, the credibility of the publisher, and the connection to the direction of national education policy towards the Golden.

The analyzed articles cover themes such as the transformation of Islamic education in the era of Industry 4.0, the implementation of the Merdeka Belajar Kampus Merdeka (MBKM) policy, strategies for strengthening students' soft and hard skills, the equitable distribution of educational infrastructure, and cross-sector collaboration in achieving sustainable development. Data collection was carried out through the process of identifying, classifying, and synthesizing literature based on its relevance and contribution to the development of a PTKI-DUDI collaboration model. Meanwhile, data analysis used content analysis techniques to identify patterns, main themes, and conceptual

relationships among sources. This analysis process involved data reduction, content interpretation, and drawing conclusions, which were used to formulate a conceptual model for strategic PTKI-DUDI collaboration as a means to enhance the quality and equity of Islamic higher education in achieving the Golden Indonesia 2045 vision.

FINDINGS AND DISCUSSION

Findings

This research suggests that collaboration between Islamic Higher Education Institutions (PTKI) and the Business and Industrial World (DUDI) is a crucial strategy for enhancing the quality, relevance, and equity of Islamic higher education, aligning with the vision of Golden Indonesia 2045. Based on a review of 20 scholarly articles from reputable sources, including Scopus, DOAJ, SINTA, and relevant scientific proceedings, it was found that the integration of academia and industry has proven effective in strengthening graduate competencies, expanding educational access, and driving digital transformation within PTKI. Several studies have shown that synergies in industry-needs-based curricula, internship programs, applied research, and entrepreneurship incubation development are capable of producing graduates who are adaptive, innovative, and possess a moderate Islamic character. Furthermore, data from the Ministry of Education, Culture, Research, and Technology (2023) indicate that the Gross Enrollment Rate (GER) for higher education in urban areas reached 36.31%. In contrast, in the 3T regions (disadvantaged, frontier, and outermost), it was approximately 19.57%. Therefore, the PTKI-DUDI collaboration, facilitated by digital learning and collaborative scholarships, plays a vital role in equalizing educational quality. Overall, the results of this literature review confirm that the PTKI-DUDI partnership model not only enhances graduate competitiveness but also serves as a strategic tool in achieving the Sustainable Development Goals (SDGs) and promoting inclusive and equitable education.

Table 1. Findings of the Literature Review

Title	Article Name	Problem	Objective	Method	Result
The Merdeka Curriculum and Kampus Merdeka Policy as a Precursor to Indonesia's Golden Year 2045 (Suharjo & Jacky, 2023)	Proceedings of National Science Seminar	Low integration of soft skills and hard skills in the higher education system	To describe the MBKM policy as a strategy towards Indonesia Gold 2045	Literature study & policy analysis	MBKM can actualize an adaptive and competitive higher education system

The Urgency of MBKM Entrepreneurship Activities to Realize the Graduate Profile of Islamic Education at UIN Sunan Kalijaga (Rahmah & Sukiman, 2024)	Research and Development Journal	Lack of entrepreneurial spirit among Islamic Education graduates	To illustrate the importance of MBKM-based entrepreneurship activities to improve graduate competence	Qualitative study, document analysis	MBKM can enhance the entrepreneurial skills of Islamic Education students based on creative IT
Preparing Indonesia's Golden Generation 2045 to Face the Demographic Bonus Through Creativity-Based Learning (Saleh et al., 2023)	Journal of Education Science	The demographic bonus has the potential to become a burden if the younger generation is not creative	To develop creativity-based learning to prepare the golden generation	Literature & conceptual review	The MBKM curriculum encourages a balance of hard skills and soft skills
Evaluation of the MBKM Program in Higher Education with the CIPP Model (Febriyanti et al., 2024)	Journal of Educational Articles	The implementation of MBKM has not been comprehensively evaluated	To evaluate the MBKM program using the CIPP model	CIPP Evaluation (Context, Input, Process, Product)	MBKM has been proven to improve graduate competencies to meet the needs of Business and Industry (DUDI)
The Role of Universities in Preparing Generation Z as Future Leaders (Rukmana, 2025)	Mimbar Justitia Proceedings	Generation Z requires strengthening of literacy, competence, and character	To explore the role of universities in preparing Generation Z as future leaders	Literature study & descriptive analysis	Universities play a crucial role in building basic literacy, competence, and soft-hard skills
Educational Transformation Strategy in Developing Superior Human Resources at Universities in Bone Regency (Rahman, 2025)	Journal of Indonesian Scholars for Social Research	Low readiness of superior human resources in regional universities	To formulate an educational transformation strategy	Qualitative study, policy analysis	MBKM-based educational transformation, internships, and Islamic management are effective in developing human resources
The Philosophical Analysis of the	Journal of Educational Management	Challenges for Indonesian Islamic	To analyze the future of Islamic higher	Comparative	PTKI needs to reconstruct its educational

Future of Islamic Higher Education in Indonesia-Malaysia Facing Megatrend 2045 (Hasanah & SZ, 2023)		Universities (PTKI) in facing the 2045 megatrend	education from a philosophical perspective	philosophical analysis	paradigm to remain relevant in the 2045 era
Muhammad Iqbal's Islamic Education Philosophy: Critical Analysis of the MBKM Curriculum (Khanafi et al., 2025)	Kanz Philosophia: Journal of Islamic Philosophy	The MBKM curriculum has not been studied from the perspective of Islamic education philosophy	To critique MBKM using Muhammad Iqbal's philosophical approach	Literature study & philosophical analysis	MBKM is aligned with Iqbal's reconstructionism, shaping competent graduates with soft-hard skills
The Quality of Education from an Islamic Perspective: Analysis of MBKM in Facing Society 5.0 (Rochmat et al., 2023)	Journal of Education	The challenges of Society 5.0 require adaptive quality of Islamic education	To analyze the quality of Islamic education through the MBKM curriculum	Literature analysis & Islamic perspective	MBKM improves student readiness to face the Society 5.0 era with superior soft skills
Educational Curriculum Policy In The Era Of President Joko Widodo And Its Implications For Islamic Education (Tajurrahman et al., 2024)	Journal of Islamic Education Studies	Curriculum policies have not fully strengthened attitudes, knowledge, and skills in Islamic education	To explain the implications of Jokowi-era curriculum policies on Islamic education	Literature study & policy analysis	MBKM strengthens student soft-hard skills through the development of attitudes, knowledge, and skills
Analysis of MBKM Student Satisfaction with the E-Government Service ELSA BRIN (Azmi & Salsabila, 2025)	ANTASENA: Governance and Public Policy	User satisfaction with MBKM's e-government services has not been measured	To measure MBKM student satisfaction with the ELSA BRIN digital service	Quantitative survey	Students are satisfied with the service; MBKM supports the improvement of soft-hard skills and national research
Pancasila as the Basis of Merdeka Belajar Kampus	Pancasila: Jurnal Keindonesiaan	The ideological basis of MBKM is less understood as an	To describe Pancasila as the philosophical foundation of MBKM	Normative study & literature	MBKM based on Pancasila can shape students with character

Merdeka (Karjono, 2023)		implementation of Pancasila			and competitiveness
Analysis of Jambi University's Early Childhood and Primary Education Program for a Global Competitive Generation (Yantoro et al., 2022)	Journal of Islamic Education	Socialization of MBKM in the Early Childhood Education (PAUD) study program is not optimal	To evaluate the implementation of MBKM in the Early Childhood and Primary Education program	Qualitative descriptive study	MBKM strengthens character education for the golden generation 2045
Universities as Pillars for Building Excellent Human Resource (Saputri et al., 2025)	Journal of Competency-Based Education	Universities have not been optimal in preparing excellent human resources with global character	To explore the role of universities as pillars for building excellent human resources towards Indonesia Gold 2045	Conceptual review	Universities emphasize soft skills, ethics, and leadership in addition to technical expertise
Harmony in Education: An In-Depth Exploration of Indonesian Academic Landscape (Samala et al., 2024)	TEM Journal	Project-based learning has not had a significant impact due to teacher limitations	To explore the Indonesian academic landscape in the vision of the golden generation 2045	Cross-country literature study	Project-based learning curriculum supports the Pancasila Student Profile, but implementation is still weak
Efforts to Strengthen Digital Talent to Improve the Quality of Human Resources Towards a Golden Indonesia 2045 (Oktoviano & Hadiningrat, 2025)	JIPOWER: Journal of Policy and Workforce Research	Low digital talent is an obstacle to developing superior human resources	To formulate a strategy for strengthening digital talent in the MBKM era	Conceptual review	Digital talent encompasses both hard and soft skills, which are crucial for Indonesia's global competitiveness
Critical Analysis Building the Quality of Islamic University in the	Jurnal Asy-Syukriyyah	Islamic universities have not been optimal in preparing	To critique the implementation of MBKM in Islamic universities	Critical literature analysis	MBKM helps students develop soft-hard skills but is

World of Work (Anggun et al., 2024)		graduates for the world of work			constrained by regulations
The Implementation of Merdeka Curriculum to Realize Indonesia Golden Generation: A Systematic Literature Review (Syahrir et al., 2024)	Al-Ishlah: Jurnal Pendidikan	There has been no comprehensive synthesis of the impact of MBKM on the golden generation	To present a systematic review of the implementation of MBKM	Systematic literature review	MBKM contributes positively to character education and the strengthening of soft skills
Synergy of Education, Business, and Policy: Developing Green HR Competence (Al Mugni et al., 2025)	Proceeding of International Conference	Green HR competence has not been a focus in the MBKM era	To develop green competence based on Islamic education & policy	Conceptual analysis (triple helix)	Collaboration between education, business, and policy encourages sustainable, excellent human resources
Preparing Independent Golden Millennial Generation Through Character Education (Listyaningsih et al., 2021)	Proceedings on Education and Social Sciences	The millennial generation needs character education based on MBKM	To formulate the role of character education in preparing the golden generation 2045	Literature & conceptual study	MBKM with digital literacy shapes an independent, character-driven, and modern millennial generation

Discussion

The discussion on the collaborative model between Islamic Higher Education Institutions (PTKI) and the Business and Industrial World (DUDI) towards educational quality and equity in 2045 needs to be placed within a comprehensive framework. This framework should not only focus on enhancing student competencies but also on equalizing access to education across all regions of Indonesia. The analyzed literature review results indicate that the Merdeka Belajar Kampus Merdeka (MBKM) policy is a key strategy capable of bridging the academic needs of students with the practical demands of the workforce. However, the successful implementation of MBKM in PTKI is highly dependent on the extent to which the institutions can build collaborative networks with

industry, adapt relevant curricula, and provide students with real-world experience through internship programs, applied research, and entrepreneurship incubation.

The alignment of the Islamic Higher Education (PTKI) curriculum with the demands of the modern industry is a critical factor. An overemphasis on normative and religious aspects, without integrating practical skills, risks rendering PTKI graduates less competitive in the job market. Previous studies indicate that the Freedom to Learn-Independent Campus (MBKM) policy can effectively balance hard skills such as digital technology proficiency, analytical abilities, and data literacy with soft skills like communication, collaboration, leadership, and creativity. While PTKI institutions, grounded in moderate Islamic values, excel at instilling moral integrity, their graduates must be fully prepared for global challenges. This necessitates a curriculum redesign developed in collaboration with industry partners. Through joint curriculum development, students can acquire learning experiences that are not merely theoretical but also meet the competency standards required in the professional world.

21st-century skills, which emphasize critical thinking, problem-solving, creativity, and digital literacy, must be prioritized in every learning program. The challenges of the Industrial Revolution 4.0 era and the transition towards Society 5.0 demand that students of PTKI (Islamic Higher Education Institutions) not only understand religious sciences but also be proficient in using information technology, understand artificial intelligence (AI), and be able to integrate spiritual values with modern innovation. Findings from several articles confirm that digital skills are one of the main obstacles in preparing for the golden generation of 2045. Therefore, collaboration between PTKI and Business and Industry (DUDI) can be directed towards developing digital talent through industry-based training, bootcamps, and collaborative projects that directly involve students in solving real-world problems in the field.

The entrepreneurship incubation program is a potential model for collaboration. PTKIs (Islamic Higher Education Institutions) need to view their graduates not only as future employees but also as prospective entrepreneurs capable of creating new jobs and opportunities. With support from industry, students can develop business projects based on technology or local wisdom that align with Islamic values. The MBKM (Freedom of Learning-Independence Campus) program offers a space for students to develop an entrepreneurial spirit; however, its implementation in PTKIs is still not optimal. Collaboration with the industrial sector can strengthen aspects of funding, mentorship, and market access for student products. Therefore, PTKI graduates will not only rely

on formal job opportunities but will also be able to become job creators who contribute to national economic development.

The educational gap between urban areas and the 3T regions (frontier, outermost, and disadvantaged) is a critically important issue. Access to quality education remains unequal, which has the potential to lead to social inequality in the future. Study results indicate that equalizing educational infrastructure and digitizing learning are the main strategies to address this gap. PTKI (State Islamic Higher Education Institutions), which are also present in remote areas, play a strategic role in bridging this gap. Through collaboration with industry, PTKI can develop e-learning platforms, blended learning, and virtual classes, enabling students in 3T regions to access education of the same standard as students in major cities. The industry can contribute by providing infrastructure, digital scholarships, and developing technology-based learning content.

The literature review results emphasize the importance of evaluating the implementation of MBKM in PTKIs. Many studies indicate that although this policy has created opportunities for strengthening both soft and hard skills, its implementation still faces obstacles, including regulations, limited resources, and a lack of effective collaboration with industry. Therefore, the development of the PTKI-DUDI collaboration model must be oriented toward sustainability, rather than just being a short-term program. This model must be designed to provide mutual benefits: PTKIs gain real-world experience for students and improve graduate quality, while industry gains access to research, innovation, and top talent that meets market needs.

The integration of Islamic values with modern needs is the distinctive advantage of Indonesian Islamic Higher Education (PTKI) that sets it apart from general universities. In this era of globalization, the moderate Islamic values taught at PTKI can serve as a moral and ethical foundation for the industrial world, which is often characterized by intense competition and economic pressures. Therefore, the collaborative model they develop produces graduates who are not only technically competent but also possess character, ethics, and integrity. This aligns with the Sustainable Development Goals (SDGs), which emphasize the importance of quality education, equal opportunity, and equitable economic growth.

The government's role as a facilitator of collaboration is crucial to the success of this model. The government must establish supportive regulations for the "link and match" between PTKIs and industry, including offering incentives to businesses that actively partner with universities. Additionally, the government can facilitate collaborative scholarship programs, joint research, and

funding for innovation centers and business incubators within the PTKI environment. Through this active governmental role, a synergistic educational ecosystem involving universities, industry, and the community can be effectively developed.

An integrative collaboration model between Islamic Higher Education (PTKI) and Business and Industry (DUDI) must also incorporate an internationalization aspect. The Golden Indonesia 2045 vision targets not only national excellence but also a competitive stance on the global stage. Consequently, collaboration with multinational corporations, participation in international research projects, and robust student and faculty exchange programs must be enhanced. PTKI must establish itself as a center of excellence in modern Islamic education, one that simultaneously produces graduates with global competencies and expertise. Through international partnerships, PTKI students will gain multicultural experiences that broaden their perspectives and bolster their competitive edge.

The social dimension of the collaboration between PTKI and DUDI must not be overlooked. Education is not merely about the transfer of knowledge and skills, but also about building social justice. This collaboration can be directed toward community development programs that involve both students and industry to provide tangible contributions to society, particularly in the 3T regions. Examples include industry-based community service programs, entrepreneurship training for local communities, and the development of digitally-based micro-enterprises that leverage industrial technology. In this way, the collaboration not only impacts students but also extends its benefits to the broader society.

Collaboration between PTKI and the Business/Industrial World (DUDI) must be built on the principles of mutual benefit and sustainability. The industrial world should not be viewed merely as an employer of graduate labor, but also as an equal partner in shaping the Golden Generation of 2045. PTKI must be open to the needs of the industry, while the industry must appreciate the academic contributions of the campus in producing research, innovation, and character-driven human resources. With an equal relationship, the collaboration will run in a healthier, more productive, and sustainable manner.

Based on the aforementioned explanation, it is clear that the PTKI-DUDI collaboration model is not only relevant but also highly urgent to realize. The challenges of the demographic bonus, the Industrial Revolution 4.0, the transition towards Society 5.0, and the global demand for a highly competent workforce demand an educational transformation that is integrated, adaptive, and

inclusive. PTKI has excellent potential to play a strategic role in realizing the vision of Golden Indonesia 2045, provided it can build strong synergy with the business and industrial worlds.

CONCLUSION

Based on comprehensive research, we conclude that a powerful partnership between Islamic universities and the business and industrial world is a key strategy for advancing the quality and fairness of education in Indonesia, paving the way for Golden Indonesia 2045. This partnership is crucial for addressing modern global challenges, including rapid technological change, evolving job markets, the need for digital skills, and the integration of ethical values with professional expertise. The model achieves this by updating curricula to meet industry needs, fully embracing the "Freedom to Learn" policy, honing both practical and interpersonal skills, and offering students real-world experience through internships, joint research, startup support, and community projects. Not only does this boost graduate employability and global standing, but it also helps close the education gap between cities and remote areas by expanding digital learning, improving infrastructure, and ensuring equal access for everyone. Rooted in moderate Islamic principles, these universities are poised to become exemplary institutions that develop graduates who are not only morally grounded but also innovative, adaptable, and ready to compete in today's fast-paced world. When the government provides supportive policies, industry acts as a committed partner, and universities focus on nurturing knowledge and character, the result is a win-win and self-sustaining ecosystem. This collaborative environment is crucial for developing a high-quality, inclusive, and equitable education system. In essence, this PTKI-DUDI collaboration is more than just a theory; it is a practical and actionable plan. It directly contributes to global education goals and lays the essential groundwork for the Golden Generation of 2045. This generation is devout, principled, knowledgeable, self-reliant, and prepared to succeed on the world stage.

REFERENCES

Abdul, S., Adeghe, E. P., Adegoke, B. O., Adegoke, A. A., & Udedeh, E. H. (2024). Promoting health and educational equity: Cross-disciplinary strategies for enhancing public health and educational outcomes. *World Journal of Biology Pharmacy and Health Sciences*, *18*(2), 416–433.

Aderempas, T., Lukman, A., & Emmi, K. H. (2025). *Implementasi Kebijakan Pemerintah Daerah Bidang Pendidikan Dan Implikasinya Terhadap Pemerataan Infrastruktur Pendidikan Di Kabupaten Kepahiang*. Institut Agama Islam Negeri Curup.

Al Mugni, S. A., Humairah, M., & Priurity, K. (2025). Synergy Of Education, Business, And Policy: Developing Green Human Resources Competence for Sustainable Economic Transition in

Indonesia. *Proceedings of International Students Conference of Economics and Business Excellence*, *2*(1), 136–145.

Alam, A., & Mohanty, A. (2023). Cultural beliefs and equity in educational institutions: exploring the social and philosophical notions of ability groupings in teaching and learning of mathematics. *International Journal of Adolescence and Youth*, *28*(1), 2270662.

Anggun, D., Lestari, F. D., Damayanti, N., & Amrillah, R. (2024). Critical Analysis: Building The Quality of Islamic University in the World of Work *Jurnal Asy-Syukriyyah*, *25*(1), 47–61.

Azmi, M. N., & Salsabila, A. (2025). Analisis Kepuasan Mahasiswa MBKM terhadap Layanan E-Government ELSA BRIN. *ANTASENA: Governance and Innovation Journal*, *3*(1), 210–222.

Bjelobaba, G., Savić, A., Tošić, T., Stefanović, I., & Kocić, B. (2023). Collaborative learning supported by Blockchain Technology as a model for improving the Educational Process. *Sustainability*, *15*(6), 4780.

De Bie, A., Marquis, E., Cook-Sather, A., & Luqueño, L. (2023). *Promoting equity and justice through pedagogical partnership*. Taylor & Francis.

Duncan-Andrade, J. M. R. (2022). *Equality or equity: Toward a model of community-responsive education*. Harvard Education Press.

Ellis-Robinson, T., & Coles, J. W. (2021). School, university, and community collaboration to promote equity through inclusive cultural competence. *Education Policy Analysis Archives*, *29*, 44.

Fadjarajani, S., Hadi, M. I., Hamzah, A., Hapsari, R. R. P. D., Yanto, O., Diba, D. F., Rosali, E. S., Rohman, S. N., Ginting, S., & Wedyawati, N. (2021). *Dosen Penggerak dalam Era MBKM*. Pascasarjana Universitas Negeri Gorontalo.

Febriyanti, C., Kencanawaty, G., & Irawan, A. (2024). Evaluasi Program MBKM (Merdeka Belajar Kampus Merdeka) pada Perguran Tinggi dengan Model CIPP (Context, Input, Process, and Product). *SAP (Susunan Artikel Pendidikan)*, *8*(3), 520–526.

Gan, W., Qi, Z., Wu, J., & Lin, J. C.-W. (2023). Large Language Models in Education: Vision and Opportunities. *2023 IEEE International Conference on Big Data (BigData)*, 4776–4785.

Germain, E. (2022). Well-being and equity: A multi-disciplinary framework for rethinking education policy. *Peabody Journal of Education*, *97*(1), 6–17.

Hasanah, U., & SZ, Z. F. (2023). The Philosophical Analysis of the Future of Islamic Higher Education in Indonesia and Malaysia in the Face of the Megatrend 2045. *Al-Fikrah: Jurnal Manajemen Pendidikan*, *11*(1), 174–186.

Helena, R., & Bagger, A. (2021). Developing Mathematics Education to Promote Equity and Inclusion: Is It Possible? *11th International Mathematics Education and Society Conference, Klagenfurt, Austria, September 24-29, 2021*, 223–226.

Jagers, R. J., Skoog-Hoffman, A., Barthelus, B., & Schlund, J. (2021). Transformative social emotional learning: In pursuit of educational equity and excellence. *American Educator*, *45*(2), 12.

Karjono, K. (2023). Pancasila Sebagai Basis Merdeka Belajar Kampus Merdeka. *Pancasila: Jurnal Keindonesiaan*, *3*(2), 228–239.

Khanafi, A. F., Arifin, S., & Mukhlis, F. (2025). Muhammad Iqbal's Islamic Education Philosophy: Critical Analysis of the MBKM Curriculum. *Kanz Philosophia: A Journal for Islamic Philosophy and Mysticism*, *11*(1), 1–20.

Lamadang, K. P. (2022). Merdeka Belajar di Tengah Harapan. *Merdeka Belajar*, *88*.

Lett, E., Adekunle, D., McMurray, P., Asabor, E. N., Irie, W., Simon, M. A., Hardeman, R., & McLemore, M. R. (2022). Health Equity Tourism: Ravaging the Justice Landscape. *Journal of Medical Systems*, *46*(3), 17.

Listyaningsih, L., Alrianingrum, S., & Sumarno, S. (2021). Preparing an independent golden millennial generation through character education. *2nd Annual Conference on Education and*

Social Science (ACCESS 2020), 162–167.

Mustoip, S., Tabroni, I., Sulaiman, S., & Marliani, L. (2023). Promoting equity and excellence in elementary education: A global approach to school management and leadership. *IJOBBA: International Journal of Bunga Bangsa Cirebon*, *2*(2), 210–217.

Oktoviano, M., & Hadiningrat, K. P. S. S. (2025). Efforts to Strengthen Digital Talent to Improve the Quality of Human Resources Towards a Golden Indonesia 2045. *JIPOWER: Journal of Intellectual Power*, *2*(1), 124–140

Prastowo, A. (2021). *Pendidikan Islam Unggul di Era Revolusi Industri 4.0 dan Merdeka Belajar*. Prenada Media.

Rahmah, R. D., & Sukiman, S. (2024). Urgensi Kegiatan Wirausaha MBKM Untuk Mewujudkan Profil Lulusan PAI UIN Sunan Kalijaga. *Research and Development Journal of Education*, *10*(2), 848–858.

Rahman, A. (2025). Strategi Transformasi Pendidikan Dalam Pengembangan Sumber Daya Manusia (SDM) Unggul Di Perguruan Tinggi Kabupaten Bone. *Journal of Indonesian Scholars for Social Research*, *5*(1 Special Issues), 97–106.

Ridge, M. S., & Statile, A. M. (2024). We Need It All in Quality Improvement: Local Change, Collaboration, and an Equity Lens. *Pediatrics*, *153*(5), e2024065653.

Rochmat, C. S., Yoranita, A. S. P. Y., Prihatini, M., & Wibawa, B. A. (2023). The quality of education from an islamic perspective: analysis of the Merdeka Belajar curriculum in facing the society 5.0 era. *Jurnal Tarbiyatuna*, *14*(1), 75–93.

Rukmana, I. S. (2025). Peran Kampus Dalam Mempersiapkan Generasi Z Sebagai Pemimpin Masa Depan. *PROSIDING MIMBAR JUSTITIA*, *2*(1), 65–75.

Saleh, H., Hadjaratie, L., Masaong, A. K., & Panai, A. H. (2023). Mempersiapkan Generasi Emas Indonesia 2045 Menghadapi Bonus Demografi Melalui Pembelajaran Berbasis Kreatifitas. *Aksara: Jurnal Ilmu Pendidikan Nonformal*, *9*(2), 949–958.

Samala, A. D., Rawas, S., Criollo-C, S., Bondarenko, O., Samala, A. G., & Novaliendry, D. (2024). Harmony in Education: An In-Depth Exploration of Indonesian Academic Landscape, Challenges, and Prospects Towards the Golden Generation 2045 Vision. *TEM Journal*, *13*(3).

Saputri, A. R. N., Agustina, T. S., & Khairunisa, K. (2025). Universities as Pillars for Building Excellent Human Resources: Addressing the Perception of Tertiary Education in the Golden Indonesia Era of 2045. *International Research-Based Education Journal*, *7*(2), 345–354.

Setianto, B. D. (2021). *Masa Depan Pendidikan: "Suara Mahasiswa dari NUNI untuk Keberagaman dan Kesatuan Indonesia."* SCU Knowledge Media.

Suharjo, S., & Jacky, M. (2023). Kebijakan Kurikulum Merdeka Belajar Kampus Merdeka Sebagai Penyongsong Indonesia Emas Tahun 2045. *Prosiding Seminar Nasional Ilmu Ilmu Sosial (SNIIS)*, *2*, 1068–1078.

Syahrir, S., Pujiriyanto, P., Musdalifa, M., & Fitri, S. (2024). The implementation of Merdeka curriculum to realize Indonesia's golden generation: A systematic literature review. *Al-Ishlah: Jurnal Pendidikan*, *16*(2), 1434–1450.

Tajurrahman, A. A., Rohiman, I., & Rosita, I. (2024). Educational Curriculum Policy in the Era of President Joko Widodo and Its Implications for Islamic Education. *Bestari: Jurnal Studi Pendidikan Islam*, *20*(2), 106–126.

Teemant, A., Borgioli Yoder, G., Sherman, B. J., & Santamaría Graff, C. (2021). An equity framework for family, community, and school partnerships. *Theory Into Practice*, *60*(1), 28–38.

Ushad, M., Trapsilawati, F., Mulyani, Y. P., Sari, Y., & Wicaksono, A. (2024). *Inovasi Kansei untuk Agroindustri Berbagi*. UGM PRESS.

Yantoro, Y., Destrinelli, D., Sofyan, H., Wulandari, B. A., Pamela, I. S., Hasni, U., & Amanda, R. S.

(2022). Analysis of Jambi University's Early Childhood and Primary Education Program for a Global Competitive Generation. *Nidhomul Haq: Jurnal Manajemen Pendidikan Islam*, *7*(3), 374–387.