



EDUCATION AND HUMAN RESOURCE MANAGEMENT IN DRIVING NATIONAL ECONOMIC GROWTH

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Abstrak

The role of education and human resource (HR) management in supporting national economic growth, especially amidst the challenges of globalization and digital transformation. The objective of this research is to identify and analyze strategies for developing education and HR that can drive Indonesia's economic progress. The method employed is a *Systematic Literature Review* (SLR) using content analysis of relevant studies concerning education, HR development, and their impact on the economy, particularly in the Micro, Small, and Medium Enterprises (MSME) sector. The results show that education especially vocational education and industry-based training plays a vital role in enhancing workforce skills aligned with labor market demands. Additionally, the integration of technology and digitalization in HR management contributes to increased efficiency and productivity. The conclusion of this study suggests that improving the quality of education, strengthening vocational training, and leveraging technology in HR systems should be prioritized in national economic development strategies. Synergy between the government, educational institutions, and industries is essential to create competitive and high-quality human capital on a global scale.

Keywords: Education, Human Resources, National Economy

A. Introduction

National economic development is a complex and continuous process involving various sectors and elements within society (Amsari et al., 2024). One of the most crucial aspects in supporting economic development is education and human resource management (Kurniawan, 2020). In the current era of globalization and digital transformation, the quality of human resources has become a key determinant in enhancing a country's competitiveness (Maria et al., 2024). Countries that have achieved



high levels of economic growth are typically those that have successfully developed their human capital through quality education and effective management (Asmiati et al., 2023).

Education serves as a strategic instrument for creating intelligent, competent, and productive individuals (Hidayat, 2021). High-quality education provides individuals with the opportunity to improve their skills and capacities, enabling them to participate actively in various economic sectors (Rahim, 2024). In this regard, education should not only be seen as a means of acquiring academic knowledge, but also as a process of character formation and the development of life skills that are essential in the workforce (Rahman & Kurniawan, 2023). Therefore, investment in the education sector must be regarded as a long-term investment in enhancing national productivity.

Primary education in Indonesia has undergone significant quantitative development, as evidenced by the number of elementary school teachers in West Java Province, which reached 214,568 in the 2023/2024 academic year. Among these, Bogor Regency recorded the highest number, with 20,555 teachers. This reflects the government's strong commitment to expanding access to primary education, although the challenges of ensuring quality learning and equitable teacher distribution remain major issues (Ministry of Education, Culture, Research, and Technology, 2024).

To enhance the quality of the national education system, the Ministry of Education and Culture, through the *2024 Indonesian Education Report*, provides a comprehensive evaluation covering student learning outcomes, the quality of teaching processes, equitable access to education, school governance, and the competence of human resources in schools. These data serve as a critical foundation for designing evidence-based policy interventions and improvement programs tailored to the actual needs in the field (Indonesian State Secretariat, 2024).

In addition to formal education, human resource management (HRM) through job training, competency development, and labor restructuring plays a significant role in supporting national economic growth (Maksin et al., 2023). Effective HRM fosters a healthy, efficient, and innovative work environment, thereby stimulating the growth of industrial sectors, services, and micro, small, and medium enterprises (MSMEs) (Windusancono, 2021). In the face of the challenges posed by the Fourth Industrial Revolution, responsive HRM that adapts to technological advancements becomes increasingly crucial (Qothrunnada et al., 2023). The demand for a workforce that is adaptable, creative, and proficient in information technology is essential in navigating global competition (Siregar et al., 2024).

The quality of Indonesia's human resources remains a significant challenge in driving economic progress. The World Bank ranked Indonesia 87th out of 157 countries in its 2018 Human Capital Index, highlighting substantial gaps in education, health, and

job readiness compared to other nations in the East Asia and Pacific region. This low quality of human capital directly impacts labor productivity and long-term economic growth (Kementerian Sekretariat Negara RI, 2024).

The issues within the education sector and human resource management remain highly complex. Although school participation rates have increased, the quality of education in several regions is still considered low (Maulansyah et al., 2023). Disparities in access to and quality of education between urban and rural areas present a serious obstacle to achieving equitable and high-quality human resources (Satria et al., 2025). Furthermore, the mismatch between educational outcomes and labor market demands continues to be a major concern (Ardhana et al., 2025). Many graduates are not job-ready due to a lack of practical skills that align with current labor market requirements (Istiqomah et al., 2024).

According to the Coordinating Ministry for Economic Affairs of the Republic of Indonesia (2025), the government successfully maintained economic growth at 4.95% year-on-year in the third quarter of 2024, reflecting the resilience and competitiveness of the national economy. This growth has been largely supported by improvements in human capital and the digitalization of economic sectors, which have created new opportunities in the creative industries, e-commerce, and digital services.

There is a strong correlation between education and economic growth. Research by Hanifah et al. (2023) shows that the average years of schooling, the amount of educational budget allocation, and the availability of educational infrastructure all have a significant and positive effect on the increase of Indonesia's Gross Domestic Product (GDP). This reinforces the argument that investment in education is not only a social necessity but also an effective economic strategy.

The study by Indah et al. (2025) reveals strategies for human resource (HR) development in enhancing the local economy through the MSME sector in Surabaya. The study emphasizes the importance of training, socialization, marketing digitization, and strategic collaboration in improving the skills and competitiveness of business actors. While the focus of this research is on the local economy and the MSME sector, it shares similarities with the research that will be conducted, particularly in highlighting the strategic role of HR management in driving economic growth. The difference lies in the scope of the study, where the upcoming research will have a national perspective, not limited to the MSME sector, and will examine the synergy between formal education, government policies, and the private sector's role in shaping superior human resources in the era of digital transformation.

Lase et al. (2024) explore the role of innovation in education, emphasizing adaptive reforms to improve the quality of education in Indonesia. Technological innovation, including the use of AI and digitalization, is deemed crucial in accelerating the learning

process and enhancing access to more equitable education. This aligns with the research I will conduct, which also focuses on HR development through digital-based training and skills enhancement to support MSMEs. The difference lies in the scale and context; Lase's research focuses more broadly on the application of educational innovations, while my research is more specific to skills development in the MSME sector to boost the local economy.

Based on the introduction, the researcher is interested in conducting a study titled "Education and Human Resources in Driving National Economic Growth." The purpose of this research is to identify and analyze strategies for the development of education and human resources (HR) that can support economic growth.

B. Method

This research employs a Systematic Literature Review (SLR) method, combined with content analysis techniques (Kurnia et al., 2023). The SLR approach was chosen to systematically identify, evaluate, and synthesize findings from previous studies relevant to strategies for developing education and human resources (HR) to support national economic growth, particularly in the Micro, Small, and Medium Enterprises (MSME) sector. (Hasbar & Hanim, 2025).

1. Data Sources and Search Strategy

Literature searches were conducted using national and international academic databases, including Google Scholar, Scopus, Web of Science, and Garuda. The search utilized keywords such as:

Education, human resource development, economic growth, MSME, digital transformation, vocational training.

2. Inclusion and Exclusion Criteria

Inclusion criteria:

Journal articles, conference proceedings, and research reports published between 2019 and 2025. Studies discussing the relationship between education, HR development, and economic growth in Indonesia. Studies containing empirical data, policy analysis, or best practices related to education and HR development in the MSME sector or at the national level.

Exclusion criteria:

Articles not available in full text. Studies that discuss only education or HR without linking to economic growth. Non-academic publications (opinion pieces, news articles, etc.).

3. Literature Selection Procedure

Stage 1: Initial identification through titles and abstracts.

Stage 2: Selection based on inclusion and exclusion criteria.

Stage 3: Full-text screening for further analysis.

Stage 4: Extraction of key data (year, authors, objectives, methods, main findings).

4. Data Analysis Technique

Data were analyzed using a content analysis approach, grouping the main findings of each study into major themes:

- a) The role of education in HR development,
- b) The impact of vocational training on workforce readiness,
- c) Integration of technology in HR management,
- d) The effect of HR development on MSME and national economic growth.

Each finding was critically reviewed to identify patterns, research gaps, and strategic recommendations applicable to Indonesia.

5. Validity and Reliability

To enhance validity, the selection and data extraction processes were conducted independently by two researchers and then compared for consistency. Any discrepancies were resolved through discussion.

C. Finding and Discussion

1. The Impact of Education on Human Resource (HR) Quality

Education plays a crucial role in enhancing the quality of human resources (HR), which directly contributes to a country's economic growth (Amrullah et al., 2024). High-quality education improves individuals' skills and knowledge, thereby increasing labor productivity and competitiveness (Hasanah, 2024). Research by Kholifaturrohmah et al. (2022) found that higher levels of education significantly affect labor productivity and economic growth in developing countries. This is because education not only enhances technical skills but also fosters problem-solving abilities—skills that are essential in addressing global economic challenges.

Another study by Maulida et al. (2024) emphasized that the quality of education has a greater influence on economic growth than the quantity of education, affirming that investing in high-quality education is far more valuable than simply increasing school enrollment rates. In the Indonesian context, the education sector shows a direct correlation between educational attainment and the quality of HR (Anata et al., 2024). According to Maulida et al. (2025), graduates from higher education institutions tend to have higher incomes and contribute to improving the competitiveness of industries. However, Indonesia still faces a significant challenge in the form of educational quality disparities between urban and rural areas, which affect the equitable development of human resources (Dahyanti et al., 2025). Research by Al-Faiza et al. (2025) supports this, indicating that although school participation rates have improved, educational quality gaps persist particularly in regions with limited educational infrastructure.

In addition, vocational education plays a vital role in developing a job-ready workforce (Suparyati & Habsya, 2024). Research conducted by Razan et al. (2025) highlights that vocational education, which prioritizes practical and technical skills, significantly contributes to improving the quality of human resources in the industrial sector. Industry-oriented vocational programs are increasingly being launched in Indonesia; however, there remains a challenge in aligning educational curricula with labor market demands. Findings from Melo et al. (2024) indicate that improving the quality of vocational education can enhance human resource capacity and stimulate local economic growth through job creation in industrial sectors.

Nevertheless, improving human resource quality through education is not solely dependent on the quality of educational institutions. It also relies heavily on government policies that support equitable access to education for all segments of society (Yunus, 2024). A study by Mardhiah (2025) reveals that government policies implementing scholarship programs and skills training play a significant role in improving educational access for marginalized groups, which ultimately contributes to the overall enhancement of human resource quality.

Thus, the impact of education on human resource quality illustrates that improvements in both formal and vocational education are crucial for developing a competent, adaptive, and market-ready workforce capable of meeting global economic challenges. Quality education enhances the competitiveness of human resources, which in turn drives national economic growth. However, achieving this goal requires synergy among the government, educational institutions, and industry sectors to ensure that education provided is relevant to market needs and accessible to all members of society.

2. The Role of Vocational Education in Developing Quality Human Resources

Vocational education plays a crucial role in the development of high-quality human resources, particularly in addressing the evolving demands of the labor market, which increasingly prioritizes practical skills. Designed to equip learners with technical and professional competencies relevant to industry needs, vocational education ensures that graduates possess not only theoretical knowledge but also applicable work skills. In the context of national economic development, vocational education serves a strategic function by preparing a productive, competitive, and job-ready workforce (Hartanto et al., 2019).

Research conducted by Zaenab et al. (2021) supports this perspective, indicating that vocational education significantly enhances graduates' job readiness and helps bridge the gap between the education sector and the business/industrial world. This is achieved through a curriculum that emphasizes real-world work practices, as well as internship or fieldwork programs that reinforce students' hands-on experience. Furthermore, vocational education promotes mastery of specialized skills in fields such

as automotive engineering, electricity, information technology, and culinary arts, all of which are highly sought after in today's labor market.

The study by Vierke (2019) reinforces these findings by stating that the employment absorption rate of vocational education graduates is higher than that of general education graduates, particularly in the industrial and manufacturing sectors. Moreover, the involvement of industry stakeholders in designing vocational education curricula is a crucial factor in ensuring that learning materials remain relevant to real-world demands. The "link and match" model of vocational education connecting schools with industry—has proven to be a key strategy in producing human resources aligned with labor market needs.

However, vocational education in Indonesia still faces significant challenges. These include low student interest in vocational schools, limited access to adequate facilities and modern technology, and suboptimal collaboration between educational institutions and the industrial sector. Research by Perdana (2019) highlights that many vocational schools (SMKs) in rural areas lack practical equipment that matches current industrial technology, thus hindering practice-based and technology-driven learning. This issue is further exacerbated by the lack of training for vocational teachers in developing innovative and relevant teaching methods.

In an effort to address these challenges, the Indonesian government has launched various vocational education revitalization programs. These initiatives include strengthening partnerships between vocational high schools (SMK) and the business sector, establishing vocational training centers, and developing Teaching Factories that enable students to learn directly within a production environment. According to a report by the Ministry of Education, Culture, Research, and Technology (2022), these revitalization programs have begun to show positive outcomes, including an increase in students' technical skills and a growing number of vocational graduates being employed within six months of graduation.

Thus, the role of vocational education in developing quality human resources is crucial, particularly in producing a workforce that is ready to compete in the global market. Vocational education is not merely an alternative to general education, but a strategic solution to reduce unemployment and enhance national productivity. Therefore, strengthening vocational education should become a shared priority among the government, educational institutions, and the industrial sector in order to realize an Indonesian workforce that is highly competent and globally competitive.

3. The Role of Technology and Digitalization in Human Resource Management

The advancement of technology and the process of digitalization have had a significant impact on human resource (HR) management across various sectors, including in Indonesia. Previous studies emphasize that the integration of technology into HR

management can enhance efficiency, productivity, and the quality of workforce performance. According to Kinasih and Azhar (2025), the use of digital-based HR management systems, such as the Human Resource Information System (HRIS), has facilitated administrative tasks, recruitment processes, performance evaluations, as well as employee training and development. Technology also allows companies to access real-time data, which supports faster and more accurate strategic decision-making. Moreover, in the context of globalization and Industry 4.0, technological proficiency among workers has become a necessity in order to remain competitive in an increasingly demanding labor market.

Research by Bharuddin and Hatta (2024) highlights that digitalization has opened new opportunities for remote learning and training through e-learning platforms, which proved particularly beneficial during the COVID-19 pandemic. Online training programs not only reduce costs but also improve accessibility and time flexibility for participants, especially for HR in remote areas. The digitalization of HR training also fosters the development of both basic and advanced digital skills, which are essential in adapting to digital transformation in the workplace. However, the effectiveness of such programs highly depends on the readiness of technological infrastructure and the digital literacy of the workforce.

Subroto et al. (2023) reveal that digital divides between regions in Indonesia remain a major challenge, particularly in terms of internet connectivity and access to adequate technological devices. This disparity hinders the equitable implementation of digital HR development programs and underscores the need for inclusive policies to support technological access across all regions.

4. Synergy Between Education, Government, and the Business Sector in Improving Human Resource Quality

The synergy between education, government, and the business sector has become a central focus in numerous studies that highlight the importance of cross-sector collaboration in enhancing the quality of human resources (HR) in Indonesia. Various studies indicate that the mismatch between graduates' competencies and industry demands is one of the main factors contributing to the high rate of educated unemployment. In this context, the education sector is expected not only to emphasize theoretical knowledge but also to establish strong partnerships with industry players to ensure that the curriculum aligns with labor market needs.

A study by Alvendri et al. (2023) revealed that implementing industry-oriented curricula through cooperation between vocational education institutions and companies significantly improves graduates' employability skills. The jointly designed curriculum produces graduates who possess not only fundamental knowledge but also the technical and soft skills required by the business sector. Such collaboration helps bridge the gap

between academia and industry, fostering a more competent and competitive workforce ready to meet the demands of the digital and global economy.

In addition, the government plays a strategic role as a policy regulator and provider of facilities that support the integration between education and industry. Programs such as the revitalization of vocational high schools (SMKs), the provision of the *Kartu Prakerja* (Pre-Employment Card), and the establishment of Job Training Centers (*Balai Latihan Kerja*, or BLK) represent concrete forms of government intervention aimed at enhancing the skills and competitiveness of the workforce. The study by Suhadi et al. (2021) demonstrates that government policies supporting the "link and match" between education and the business sector have a positive impact on the efficiency of training programs and employment absorption.

The presence of career centers supported by both the private sector and the government helps students access job vacancy information, job skills training, and even entrepreneurship mentoring. This collaboration not only increases employment opportunities for graduates but also fosters the emergence of young entrepreneurs capable of creating new jobs. Moreover, the business sector actively participates in promoting technology- and project-based education, which challenges students to solve real-world problems through creative and innovative approaches (Mei et al., 2024).

D. Conclusion

Based on the analysis and review of previous studies, it can be concluded that the improvement of human resource (HR) quality in Indonesia cannot be separated from the synergy between education, the government, and the business sector. Education serves as the fundamental foundation for equipping individuals with knowledge and skills, particularly through vocational education that aligns with industry needs. The government plays a critical role in providing regulations, supporting infrastructure, and implementing strategic programs such as the revitalization of vocational schools (SMKs) and inclusive job training.

Meanwhile, the business sector contributes to the learning process by offering internships, technical training, and support for industry-based curriculum development. This collaboration has proven effective in reducing skills gaps, improving graduates' job readiness, and fostering the emergence of innovative young entrepreneurs. However, challenges remain in terms of coordination among stakeholders and mismatches between regulations and market demands. Therefore, a continuous, adaptive, and participatory synergy is essential to develop high-quality human resources capable of competing in the era of globalization and the Fourth Industrial Revolution.

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