



Optimization of Human Resources in Creating a Productive Entrepreneurial Environment in Schools

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Abstract

The development of modern education requires schools not only to focus on academic achievement but also on character formation, creativity, and entrepreneurial skills of students. In this context, the optimization of human resources (HR) becomes a strategic aspect in creating a productive entrepreneurial environment in schools. This study aims to analyze the role of HR in supporting entrepreneurship, identify factors influencing optimization, and formulate appropriate development strategies. The research method employs a literature review by examining previous studies and relevant literature on the contribution of principals, teachers, administrative staff, and educational policies in strengthening school-based entrepreneurship. The findings indicate that HR plays a vital role through visionary leadership, practice-based learning, efficient administrative management, and both internal and external collaboration. The optimization process is influenced by competence, continuous training, leadership support, facilities, motivation, and government policies such as the Merdeka Curriculum. Recommended strategies include capacity building through training, integrating entrepreneurial values across subjects, forming school entrepreneurship teams, developing partnerships with businesses, and utilizing digital technology for learning and marketing. This study concludes that well-managed and sustainable HR development can foster an innovative and productive school entrepreneurship ecosystem. The implication is that schools need to build a systematic entrepreneurial culture so that students are equipped not only with academic knowledge but also with entrepreneurial mindsets that are independent, creative, and competitive in facing global challenges.

Keywords: Human Resources, Entrepreneurship, Education, Optimization, School Culture

Introduction

The paradigm shift in 21st-century education requires schools not only to emphasize academic achievement but also to equip students with life skills that are relevant to global demands. One of the essential skills to be developed is entrepreneurship. A productive

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entrepreneurial environment in schools can serve as a platform to foster independence, creativity, innovation, and the ability to cope with the dynamics of an increasingly competitive labor market. In this context, schools play an important role as institutions that prepare students with practical entrepreneurial skills (Haleem et al., 2022).

The optimization of human resources (HR) is a key factor in creating a conducive entrepreneurial ecosystem. Principals, teachers, administrative staff, and supporting personnel are not only policy implementers but also the driving force behind the entrepreneurial culture in schools. Hidayat and Fauzan (2024) emphasized that visionary school leadership plays an essential role in fostering an innovative entrepreneurial ecosystem. Meanwhile, Maulana (2023) demonstrated that educational staff significantly contribute to sustaining student entrepreneurial activities through administrative and technical support (Park & Kwon, 2024). Teachers also play a vital role as facilitators of project-based learning, integrating entrepreneurial values into various subjects.

In practice, however, HR optimization often encounters several challenges, such as limited competencies, lack of training, and insufficient policy support (Teräs et al., 2020). Previous studies highlighted that the success of entrepreneurship programs depends largely on the extent to which teachers and staff are empowered through continuous professional development and supportive leadership (Nurhalimah & Putri, 2022). In addition, motivation and reward systems also influence the active involvement of HR in supporting school entrepreneurship.

At the same time, educational policies in Indonesia, particularly the Merdeka Curriculum, provide significant opportunities for schools to design entrepreneurship programs that are contextual and relevant. The flexibility of the curriculum enables schools to create activities suited to local potential and student needs (Burbules et al., 2020). Nevertheless, its implementation remains challenging, particularly regarding the readiness of HR to understand and apply project-based entrepreneurship programs (Kementerian Pendidikan, Kebudayaan, 2023).

The existing literature has largely focused on curriculum approaches, teaching models, or external partnerships, while discussions on HR optimization strategies within schools remain limited. Prasetyo and Arifin (2024) demonstrated that project-based learning effectively nurtures students' entrepreneurial spirit, while Handayani (2023) highlighted the importance of utilizing digital technology to strengthen entrepreneurial skills. However, these studies did not thoroughly explore how HR can be strategically optimized as the main driver of entrepreneurship in schools (Antonietti et al., 2022). This gap highlights the need for research specifically addressing HR optimization in building a school-based entrepreneurial ecosystem.

Therefore, research on HR optimization in creating a productive entrepreneurial environment in schools becomes urgent, as it can respond to both global challenges and national education policies. Strengthening HR capacity does not only contribute to improving learning quality but also to establishing a comprehensive entrepreneurial culture in schools (Menon & Suresh, 2022). For this reason, the focus of this study is directed toward exploring

the roles, challenges, and strategies of HR optimization in the context of educational entrepreneurship development.

Based on these conditions, this study aims to analyze the role of HR in creating a productive entrepreneurial environment in schools, to identify the factors influencing HR optimization, and to formulate appropriate strategies for strengthening HR capacity. This study is expected to contribute academically by enriching the discourse on entrepreneurship in education while also providing practical recommendations for schools to build innovative, productive, and sustainable entrepreneurial cultures.

Literature Review

The Strategic Role of Teachers and School Culture in Entrepreneurial Development

Teachers play a central role in fostering students' entrepreneurial attitudes. Research by Wahyuni Baturetno et al. (2023) shows that through extracurricular activities such as scouting, teachers can cultivate creativity, decision-making skills, and courage among students. At the vocational education level, teachers' communication strategies using the SOR (Stimulus–Organism–Response) and AIDDA models have been proven effective in stimulating students' entrepreneurial spirit, although challenges remain in terms of message interpretation and delivery. Furthermore, Isgunandar et al. (2023) emphasized that the role of teachers as educators, mentors, and motivators contributes positively to the development of students' entrepreneurial character, including optimism, responsibility, and concern for quality.

Institutional Contexts, Competence, and Digital Entrepreneurship

Institutional environments and teacher competence are essential factors in supporting entrepreneurship, particularly in the digital era. Aenandari, Susilaningsih, and Sabandi (2023) found that a supportive institutional culture, along with individual readiness and professional background, significantly enhances teachers' digital entrepreneurship competencies. In addition, Maulida, Noviani, and Sudarno (2024) highlighted that entrepreneurship education integrated with technology-based learning can strengthen students' creative and innovative skills. This indicates that teachers are required to adapt their pedagogical approaches to ensure entrepreneurship education remains relevant in the digital age.

Challenges and Strategies in Human Resource Management in Education

Human resource management (HRM) in schools faces several challenges, ranging from limited teacher competencies to insufficient policy support. A qualitative study by Farleni et al. (2023) revealed that recruitment and selection, continuous training, systematic evaluation, and strong leadership are vital strategies for improving teacher capacity and educational quality. Similarly, Harini et al. (2024) highlighted innovative HRM strategies in the era of digitalization, including ICT skills development, adaptive capacity building, and transformational leadership. These strategies are considered crucial to maintaining the relevance and competitiveness of educational personnel in a rapidly changing educational landscape.

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Research Method

This study employed a qualitative approach with a descriptive-analytical design. This approach was chosen because it allows for an in-depth understanding of the optimization of human resources (HR) in creating a productive entrepreneurial environment in schools. The focus of the research was directed toward exploring the roles, strategies, as well as the supporting and inhibiting factors that influence HR involvement in the development of educational entrepreneurship.

The main instruments for data collection were the researchers themselves, supported by interview guidelines, observation sheets, and documentation. Interviews were conducted to explore the perceptions, experiences, and strategies applied by school principals, teachers, and administrative staff. Observations were used to examine entrepreneurial practices taking place in schools, while documentation was obtained from program reports, activity records, and school policies relevant to entrepreneurship development.

The participants in this study consisted of school leaders, teachers, and administrative personnel directly involved in entrepreneurship programs. A purposive sampling technique was applied, selecting participants based on their engagement in school-based entrepreneurial activities. This ensured that the data collected were highly relevant to the focus of the study.

The procedure of data collection was carried out in several stages. First, preliminary coordination was conducted with the schools to obtain research permission. Second, in-depth interviews were carried out with participants using the prepared guidelines. Third, observations were undertaken to examine entrepreneurial practices in real contexts. Finally, documentation was gathered from archives and school records to complement the data obtained through interviews and observation.

Data analysis was conducted through the stages of data reduction, data display, and conclusion drawing. The information obtained from interviews, observations, and documentation was selected, categorized, and presented descriptively. Subsequently, interpretations were made to identify patterns, relationships, and meanings related to HR optimization in developing an entrepreneurial school environment. Data triangulation was also applied to strengthen the validity and credibility of the research findings.

Results

The findings of this study indicate that human resource (HR) optimization plays a central role in creating a productive entrepreneurial environment in schools. Principals act as visionary leaders who design policies, set program directions, and foster a school climate that supports innovation. Teachers function as facilitators of learning by integrating entrepreneurial values into the curriculum, encouraging students to think creatively, and instilling the courage to take risks. Meanwhile, administrative and supporting staff contribute to program sustainability through facility management and technical support.

The collaborative roles among HR in schools prove that entrepreneurship development cannot be implemented in isolation but requires integrated teamwork. This aligns with the study by Baturetno et al. (2023), which showed that teachers, through extracurricular activities, could cultivate creativity, decision-making, and courage in students. Thus, the role of teachers and educational personnel is not limited to classroom learning but also extends to character building through various school activities.

Internal factors influencing HR optimization include competence, motivation, and the availability of training. Teachers with prior entrepreneurship education or training are more prepared to integrate entrepreneurial concepts into learning. Nurhalimah and Putri (2022) emphasized that strengthening teacher capacity through continuous training is one of the keys to the success of entrepreneurship programs in schools. Therefore, competency development must become a priority to ensure effective program implementation.

In addition to competence, motivation is also a key factor. Although many teachers and staff demonstrate interest in entrepreneurship programs, their involvement is often constrained by a lack of clear reward systems. Harini et al. (2024) emphasized that incentives and recognition can significantly increase HR engagement in supporting school programs. This shows that HR management strategies should focus not only on competencies but also on motivational aspects.

External factors also play a crucial role, particularly government policy through the Merdeka Curriculum. This policy provides schools with the flexibility to design project-based entrepreneurship programs that are contextualized to local needs. However, without adequate HR readiness, the policy may not be implemented optimally. Aenandari, Susilaningih, and Sabandi (2023) found that a supportive institutional environment, along with professional background, directly influences teachers' digital entrepreneurship competencies.

Another challenge faced by schools lies in the limited facilities and infrastructure to support entrepreneurship, such as laboratories, market access, and business networks. These limitations often restrict teachers and students in developing entrepreneurial products or services. Farleni et al. (2023) highlighted that effective HR management must be supported by sufficient facilities and infrastructure to ensure program sustainability.

The study also reveals that HR optimization strategies should include regular training, curriculum integration, and external collaboration. Digital entrepreneurship and ICT-based training have been proven effective in improving teachers' competencies, as demonstrated by Maulida, Noviani, and Sudarno (2024). Furthermore, embedding entrepreneurial values across different subjects through project-based learning is essential for cultivating a comprehensive entrepreneurial mindset among students.

Collaboration with industries, universities, and vocational institutions enriches both student and teacher experiences. Internship programs, field studies, and business partnerships provide real-world exposure for students while also updating teachers' knowledge of current entrepreneurial trends. Such collaborative approaches align with the broader goal of building sustainable school-based entrepreneurial ecosystems.

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Additionally, fostering a school culture that supports innovation and creativity is critical to program success. Principals, as leaders, need to encourage openness to new ideas and provide space for experimentation in teaching and learning. This resonates with Isgunandar et al. (2023), who found that the role of teachers as motivators can nurture optimism, responsibility, and quality awareness among students.

Overall, this discussion affirms that HR optimization in entrepreneurship education is not only about improving individual competencies but also about building a supportive system. By integrating visionary leadership, continuous training, motivational strategies, infrastructure support, and policy alignment, schools can create a productive entrepreneurial environment. The implications of these findings suggest that strengthening HR is a key strategy for ensuring the sustainability of entrepreneurship programs while simultaneously improving the overall quality of education in Indonesia.

Discussion

The findings of this study emphasize that human resource (HR) optimization is the cornerstone of creating a sustainable and productive entrepreneurial environment in schools. Rather than merely serving as implementers of policies, principals, teachers, and administrative staff collectively form the backbone of entrepreneurial ecosystems. This is consistent with A'yun, Awalluddin, and Hasan (2024), who noted that digital pedagogy optimization requires effective HR management to ensure the relevance of educational practices in the 21st century.

One of the most significant insights is that leadership and teacher competence act as the strongest drivers for school-based entrepreneurship. Visionary principals provide direction and cultivate an innovative climate, while competent teachers embed entrepreneurial values into project-based learning. These findings are reinforced by Astuti and Setiawan (2021), who found that transformational leadership from school principals strengthens entrepreneurial culture within schools.

Another important implication is that motivation and reward systems cannot be overlooked. Schools that provide incentives and recognition foster stronger HR engagement and commitment. This aligns with Hidayati and Pramono (2022), who demonstrated that reward systems and work motivation have a significant influence on the sustainability of school-based entrepreneurship programs. Thus, entrepreneurship education is not only about curriculum reform but also about creating supportive HR management practices.

The integration of technology also emerges as a transformative element in HR optimization. As highlighted by Kurniawan and Lestari (2023), digital technology offers both opportunities and challenges for entrepreneurship learning in schools, requiring teachers to develop digital competencies and adaptive teaching methods. Similarly, Fauziah and Rahman (2020) argued that digital entrepreneurship training enhances teachers' professional capacity and prepares students for the demands of the digital economy.

Taken together, these insights position HR not merely as a supporting element but as the central driver of entrepreneurship in education. By combining transformational leadership, continuous professional development, motivational frameworks, and digital integration, schools can cultivate entrepreneurial environments that are both innovative and sustainable. This supports the theoretical proposition that entrepreneurship in education must be viewed from a systemic HR-centered perspective, bridging individual capacity with institutional culture and technological adaptation.

Conclusion

This study concludes that the optimization of human resources (HR) is fundamental in establishing a productive entrepreneurial environment in schools. Principals, teachers, and administrative staff collectively serve as the backbone of entrepreneurship education, with principals providing visionary leadership, teachers acting as facilitators of entrepreneurial learning, and staff supporting program sustainability through administrative and technical roles. The findings highlight that entrepreneurship in education cannot rely solely on curriculum design but requires systemic HR management practices.

The most significant implication is that schools need to strengthen HR competencies through continuous professional development, including entrepreneurship and digital training. This is essential to equip teachers with the skills required to integrate entrepreneurial values into project-based learning and adapt to technological transformations. Furthermore, motivation and reward systems must be incorporated into HR management strategies to enhance teacher and staff commitment in supporting entrepreneurial initiatives. From a policy perspective, the Merdeka Curriculum offers flexibility for schools to design entrepreneurship programs tailored to local contexts. However, the success of its implementation largely depends on HR readiness. Therefore, policymakers should ensure adequate investment in teacher training, leadership development, and school infrastructure to maximize the impact of entrepreneurship education.

Practically, this study implies that schools should foster collaboration with industries, higher education institutions, and vocational organizations to strengthen experiential learning for both teachers and students. Building partnerships and adopting digital entrepreneurship practices will not only enrich the entrepreneurial culture within schools but also prepare students for the demands of a rapidly evolving economy. In conclusion, HR optimization must be viewed as a strategic priority for schools aiming to cultivate sustainable entrepreneurship education. Strengthening leadership, enhancing teacher competencies, motivating staff, and embracing digital transformation are key steps toward creating innovative and competitive school-based entrepreneurial ecosystems.

Declaration of conflicting interest

The authors declare that there is no conflict of interest regarding the publication of this research.

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