Jieman
Journal of Islamic Educational Management
OPEN ACCESS
2716-246X (p)
2716-2451 (e)
Faculty of Tarbiyah and Teaching Training
UIN Kiai Haji Achmad Siddiq Jember

JIEMAN: Journal of Islamic Educational Management
Vol. 7 No. 1 June 2025
Available online at
https://jieman.uinkhas.ac.id/index.php/jieman/article/view/228/version/227

Empowering The Quality Of Education To Improve The Quality And Quantity Of Human Resources Towards Era 5.0

Risqi Sofiatul Islah[1], Rizqiyana[2]
[1&2] STAI Ki Ageng Pekalongan

risqisofiatulislah08@gmail.com

Article Information:
Received 2024-07-11
Revised 2025-06-10
Published 2025-06-30

DOI:
https://10.35719/jieman.v7i1.228

Keywords: Educational Empowerment, Human Resource Development, Society 5.0

ABSTRACT

The quality of education in preparing human resources to face Era 5.0, not only demands technological competence, but also high adaptability in responding to digital and industrial transformation. This research integrates literature analysis with a Qualitative approach with a type of direct study involving educational institutions that have initiated innovations in learning approaches and curriculum development. Data was collected through in-depth interviews with teachers, students as well as through observation and documentation. The study revealed that several key elements play an important role in improving the quality of education, including adaptive curriculum development, continuous professional development for educators, integration of educational technology, and active collaboration between educational institutions and local industries. These efforts are not only instrumental in improving learning outcomes, but are also crucial in aligning education with industry needs. In addition, the findings emphasize the importance of adopting a holistic education framework that bridges the formal and non-formal education sectors while encouraging the active involvement of various stakeholders. The results of this research are critical to producing competent, innovative and future-ready individuals who are able to face the dynamic challenges of Era 5.0.

INTRODUCTION

Education is a strategic factor in improving the quality of human resources, especially in the midst of global transformation marked by the birth of Era 5.0-an era that demands high adaptability to technology, as well as collaborative and innovative skills (Capuano & Caballé, 2020). At the local level, Pekalongan Regency, as one of the regions with large potential educational resources, still faces serious challenges such as inequality in access to education, limited digital infrastructure, and a curriculum that is relevant to the needs of local industries. Data from the Pekalongan District Education Office shows that more than 40% of secondary schools are not yet fully integrated with digital learning platforms, and only 30% of teachers regularly attend learning technology training. This gap shows that the local education system is still not fully prepared to respond to the challenges of the times (Muhasim, 2017).

Previous studies have highlighted the importance of empowering education quality through adaptive curriculum development, continuous training for educators, and active collaboration between educational institutions and the industrial sector digital (Kusumawati, 2023; Baderiah, 2018). Some of them also emphasize the importance of strengthening access

How to cite: Islah, R. S., & Rizqiyana. (2025). Empowering the quality of education to improve the quality and quantity of human resources towards Era 5.0. *JIEMAN: Journal of Islamic Educational Management, 7*(1),62-70. **https://10.35719/jieman.v7i1.228**

to education, especially in disadvantaged areas (El Sabagh & Hamed, 2021). Theoretical studies support this through constructivist learning approaches that emphasize hands-on and interactive experiences in developing critical and creative thinking skills, as well as technology-based learning theories that underline the importance of information technology integration in expanding access and continuity of learning (Kurniawan & Hasanah, 2021). However, studies that explore in depth how education empowerment strategies are concretely implemented in regions such as Pekalongan district are still limited. This opens space for research that is more contextual and based on local realities.

This study aims to explore in depth the practices, challenges, and potentials of educational institutions in Pekalongan Regency in their efforts to empower the quality of education to prepare competent and adaptive human resources in facing the dynamic demands of Era 5.0. The research emphasizes identifying innovative strategies, policies, and pedagogical approaches employed by schools and madrasahs to enhance the quality of teaching and learning, increase equitable access to education, and align curricular content with the evolving needs of the industrial and digital workforce. Furthermore, this study also seeks to uncover local institutional capacities, stakeholder collaborations, and systemic obstacles that influence the success of educational transformation at the regional level.

The author believes that the success of empowering the quality of education in regions such as Pekalongan Regency is highly dependent on the ability of the education system to establish strong synergies between curriculum innovation, continuous teacher capacity building, and the active involvement of the industrial sector, local government, and the wider community. Through a holistic and integrative approach that combines formal, non-formal, and informal education, supported by the strategic use of information and communication technology, education becomes more than just a medium for knowledge transmission. It evolves into a transformative force that fosters adaptive, innovative, and globally competitive human resources. This comprehensive framework is essential in preparing future generations to meet the complex, interdisciplinary demands of the rapidly evolving Era 5.0.

RESEARCH METHODS

This study adopted a qualitative approach with a case study method to explore, in depth, the strategies used to empower educational quality in Pekalongan Regency in the face of the challenges posed by Era 5.0. This approach was chosen because it allows for a richer, more contextual understanding of the real experiences and perspectives of those directly involved in education—teachers, principals, students, school administrators, and education supervisors—especially across both urban and rural schools (Creswell, 2014). The research was focused on five selected secondary schools (SMP and SMA/SMK), chosen purposively to represent different regional characteristics and educational dynamics. Data collection was carried out through in-depth interviews with ten key informants, participatory classroom observations, and the review of relevant documents such as school curricula, teacher training reports, and educational quality programs. The interview and observation instruments were designed based on educational empowerment theories and adaptive learning frameworks, grounded in both conceptual models and previous literature (Arikunto, 2013). Thematic analysis was used to interpret the data, following a sequence of transcription, coding,

identifying emerging patterns, and composing narrative descriptions that reflect the lived realities in the field.

RESULTS AND DISCUSSION

Result

This research reveals a range of challenges and strategies in empowering the quality of education in Pekalongan District in preparation for the demands of Era 5.0. One of the most pressing challenges is the limited technological infrastructure, particularly in remote and rural areas. The disparity in access to digital tools directly impacts the effectiveness of the teaching and learning process. Many schools still lack integrated digital learning systems, and stable internet connectivity remains a major barrier to implementing online learning. This technological gap limits the capacity of schools to adopt innovative, future-oriented educational models.

A testimony from a teacher at SMP Negeri 1 Kajen highlights the severity of the issue: “We still have difficulty accessing stable internet, especially during online learning. Sometimes we have to rely on our personal quota” (Teacher of SMP Negeri 1 Kajen, April 10, 2024). This statement illustrates the heavy reliance on personal resources to sustain digital learning. Such dependence not only restricts access to teaching materials but also imposes a financial and psychological burden on educators. The lack of adequate digital support reflects the broader issue of an underdeveloped technological ecosystem in education, which hampers the transition toward more adaptive and innovative pedagogies.

Furthermore, limited digital infrastructure has negatively affected teachers’ participation in educational technology training programs. This is particularly concerning, as teacher upskilling in digital competencies is crucial for navigating the transformations of Era 5.0. The gap in access to training opportunities exacerbates disparities in teacher capacity, especially between urban and rural schools. Addressing this issue requires proactive policy interventions and strategic collaboration among local governments, internet service providers, and educational institutions. Only through such systemic efforts can the education sector in Pekalongan build a more inclusive, equitable, and technologically resilient learning environment.

Despite the challenges, this study also identified several innovative local initiatives that demonstrate the proactive efforts of educational institutions in Pekalongan to overcome systemic limitations. A notable example is the integration of digital batik design training at a vocational school, which blends traditional cultural heritage with modern digital competencies. “We adjust the curriculum so that students can be skilled in making digital batik designs, because batik is the identity of Pekalongan,” stated the Principal of SMK Batik Pekalongan. This initiative represents a strategic shift toward a competency- and technology-based curriculum that not only preserves local identity but also equips students with relevant skills for both the local creative economy and the global job market. By contextualizing digital learning within the framework of cultural relevance, schools are fostering innovation while maintaining sociocultural integrity.

Moreover, the enhancement of teacher capabilities in implementing technology-based learning and soft skills education is becoming a key component of educational empowerment

strategies (Slamet, 2022; Widodo, 2019). These professional development efforts are essential to ensure that educators can effectively guide students in navigating a rapidly changing digital landscape. The success of such initiatives, however, depends heavily on multi-stakeholder support. Collaborative partnerships involving parents, government institutions, and industry players are crucial for aligning educational practices with labor market demands and for building an inclusive, adaptive learning environment. As emphasized by (Ambarwati, 2018), such cross-sectoral cooperation is not only instrumental in curriculum relevance but also vital in cultivating a resilient education system capable of responding to the complex challenges of Era 5.0.

Table 1.1
Summary of Field Findings

Components of Education Quality	Practice in Pekalongan	Key Challenges
Learning Technology	Use of Google Classroom & Canva	Unstable internet
Adaptive Curriculum	Integration of digital batik and entrepreneurship	Lack of curriculum development training
Teacher Training	Annual workshop from Dindik	Not all teachers actively participate
Collaboration with Industry	Internships at batik MSMEs & guest speakers	Student and industry partner schedules are not synchronized

Discussion

One of the key findings of this study is the suboptimal state of digital infrastructure in many schools across Pekalongan Regency. This issue is reflected in a statement from a teacher at SMP Negeri 1 Kajen (April 10, 2024), who shared: *"We still struggle to access stable internet, especially during online learning. Sometimes we have to rely on our own personal data."* This quote highlights significant technical barriers that hinder the effective implementation of technology-based learning. It also reveals a clear digital divide, particularly in areas where adequate infrastructure is still lacking. The absence of stable internet access makes it difficult for schools to run online learning efficiently.

This finding reveals a recurring pattern of limitations within the region's digital education system, especially in terms of infrastructure readiness and technical support for both teachers and students. These constraints often place additional burdens on teachers and present challenges in maintaining the quality and continuity of distance learning. However, the research also uncovered a positive example of innovation from a school that has successfully integrated local potential into its curriculum. The principal of SMK Batik Pekalongan, stated: *"We adapted the curriculum so students can develop skills in digital batik design, because batik is part of Pekalongan's identity."* This statement illustrates a commendable initiative that bridges local wisdom with contemporary technological demands. By developing a curriculum rooted in local identity while incorporating digital skills, the school demonstrates an adaptive strategy that not only enhances students' technical competencies but also reinforces their cultural identity (Contrino, Reyes Millán, & Vázquez

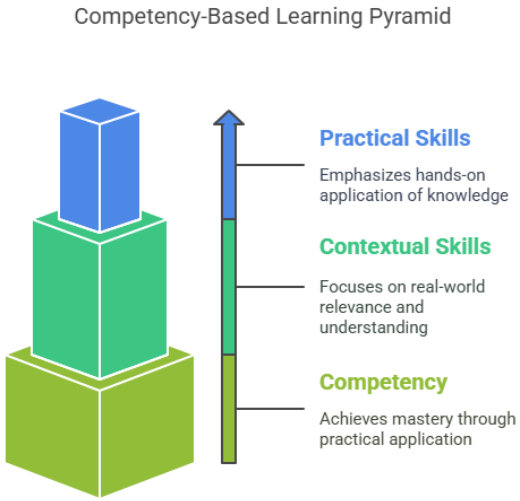
Villegas, 2024). It serves as a model of how education can remain relevant and empowering in the face of digital transformation.

Picture 2.1

The data suggest that there are genuine efforts by educational institutions to respond to the challenges of Era 5.0 through creative and contextually relevant approaches. These efforts have begun to foster an educational ecosystem that is not only adaptive to the times but also rooted in and strengthened by local values and identities. More broadly, interviews and observations reveal that most schools undertaking educational transformation share three core characteristics: (1) the integration of local potential into the curriculum, (2) consistent professional development for teachers, and (3) the use of available technologies, despite limitations in infrastructure. This pattern reflects a clear commitment to improving educational quality even in resource-constrained environments. Teachers continuously seek ways to keep the teaching and learning process alive—whether through simple online platforms or printed learning modules as practical alternatives. A restatement of the data confirms that the presence of challenges does not necessarily hinder innovation. On the contrary, many educators demonstrate strong resilience and creativity in responding to the demands of an increasingly digital era.

Theoretically, these findings reinforce Siemens' theory of connectivism (Siemens, 2005), which emphasizes that learning in the digital age depends on an individual's ability to access, connect, and apply information from various sources. When teachers and students are able to bridge technological limitations with relevant strategies, meaningful learning remains possible. The results also align with the principles of competency-based learning, which highlight the importance of practical and contextual skills. The integration between education and industry—exemplified by the vocational school SMK Batik Pekalongan—illustrates how a relevant and localized curriculum can effectively bridge the gap between school and the workforce (Baderiah, 2018;Husnan,2023).

Picture2.2



Furthermore, this study highlights the pivotal role that teachers play in the successful implementation of quality education. Continuous professional development is essential—teachers who regularly participate in training are generally more capable of inspiring and guiding their students effectively inovatif (Kurniawan & Hasanah, 2021). Through innovative approaches, educational institutions are increasingly able to nurture students' full potential, not only in academic areas but also in non-academic dimensions. Key elements in empowering educational quality include the integration of technology, the development of relevant curricula, ongoing teacher training, and active collaboration with the industrial sector (Ismail, 2020).

The use of educational technology has become a central driver of quality improvement in schools (Martin, 2023). It enables personalized learning, making the teaching process more interactive and flexible (Xu, 2021). Personalized learning ensures that each student can progress at their own pace and in accordance with their individual learning styles (Muhasim, 2017). In this context, the development of adaptive curricula that respond to technological advances and labor market needs is considered highly important. A modern curriculum must go beyond delivering academic knowledge; it must also equip students with practical skills and essential soft skills, such as communication, collaboration, creativity, and leadership (Baderiah, 2018).

In addition, collaboration between educational institutions and industry serves as a real-world example of meaningful connectivity in preparing graduates who are aligned with workforce demands (Slamet, 2022). This kind of partnership enables educational institutions to design contextual learning programs that bring students closer to real-world work experiences. Besides students, empowering teachers is also an important component. When educators are supported through continuous training, access to technology, and adaptive policies, they are better equipped to foster innovative and collaborative learning environments (Kurniawan & Hasanah, 2021). The findings highlight that project-based and problem-based learning strategies are highly relevant and effective in the context of Era 5.0. These methods not only cultivate critical and creative thinking skills but also strengthen collaboration and problem-solving abilities (Slamet, 2022). To ensure that educational quality empowerment in Kabupaten Pekalongan becomes more systematic and sustainable, strategic

policies are needed from the local Department of Education. This includes the development of a clear roadmap to support the growth of high-quality human resources through adaptive and collaborative education frameworks.

CONCLUSIONS

Improving the quality of education has proven essential in preparing human resources who are adaptive, competent, and highly competitive amid the demands of Era 5.0. This study highlights that the most effective strategies include developing a curriculum that is responsive to both current global demands and local potential, providing continuous professional development for teachers, leveraging educational technology, and fostering active collaboration between educational institutions and industry sectors. In Kabupaten Pekalongan, these efforts are gradually being adopted. Several schools have begun integrating technology-based learning and building partnerships with industries to ensure graduates possess relevant competencies. However, notable challenges persist, particularly in terms of limited digital infrastructure in certain areas and unequal access to teacher training, both in terms of opportunity and quality. Addressing these issues requires stronger policy support, investment in infrastructure, and more equitable access to professional development programs. In conclusion, the synergy between educational innovation, teacher capacity building, and cross-sector collaboration serves as a vital foundation for accelerating human resource readiness in facing the technologically driven and human-centered Society 5.0.

In terms of contribution, these findings reinforce the theoretical framework of connectivism and competency-based learning, underscoring the importance of strong connections between education, technology, and the labor market at the local level. The study also contributes to the growing body of regionally focused educational literature by showing that national education strategies cannot be applied uniformly, but must be adapted to suit the unique characteristics of each region. Practically, the results serve as a valuable reference for local policymakers, school leaders, and teachers in designing more relevant educational improvement programs that effectively prepare students to face the demands of the digital age.

Thus, although the scope of this research is still limited to several schools and informants, the findings provide a solid foundation for building a more adaptive and contextually grounded educational roadmap. Future research is encouraged to employ quantitative or mixed-method approaches to expand coverage and deepen understanding of locally driven education empowerment. Moreover, there is a pressing need to develop clear and measurable success indicators that can serve as tools for evaluating progress by local governments and educational institutions going forward

ACKNOWLEDGMENT

The author extends sincere gratitude to the Department of Education of Kabupaten Pekalongan for their institutional support and facilitation during the research process. Deep appreciation is also directed to the dedicated teachers, school principals, students, and education supervisors who willingly shared valuable data, experiences, and insights that significantly enriched the depth and relevance of this study. Their openness and commitment

to educational improvement served as an inspiration throughout the research. The author also thanks fellow colleagues for their critical input and thoughtful suggestions, which contributed to sharpening the analysis and argumentation presented in this article. Special recognition is given to the editorial and peer review team for their trust, time, and insightful feedback that helped enhance the quality of this publication. It is the author's sincere hope that this article can offer meaningful contributions to the ongoing efforts to improve educational quality and foster the development of competitive, adaptive, and humanistic human resources in the Era 5.0.

REFERENCES

Ambarwati, A. (2018). *Perilaku Dan Teori Organisasi*. Media Nusa Creative. https://www.researchgate.net/publication/324645855_Perilaku_Dan_Teori_Organisasi

Arikunto, S. (2013). *Prosedur Penelitian Suatu Pendekatan Praktik*. PT. Rineka Cipta. https://inlislite.ipdn.ac.id/opac/detail-opac?id=8242

Baderiah. (2018). *Buku Ajar Pengembangan Kurikulum*. Lembaga Penerbit Kampus IAIN Palopo. https://repository.iainpalopo.ac.id/id/eprint/308/

Capuano, N., & Caballé, S. (2020). Adaptive learning technologies. *AI in Education Column*, 97–104. http://dx.doi.org/10.1609/aimag.v41i2.5317

Contrino, M. F., Reyes-Millán, M., & Vázquez-Villegas, P. (2024). Using an adaptive learning tool to improve student performance and satisfaction. *Smart Learning Environments*, 11(6). https://doi.org/10.1186/s40561-024-00292-y

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE Publications https://spada.uns.ac.id/pluginfile.php/510378/mod_resource/content/1/creswell.pdf

El-Sabagh, M., & Hamed, M. (2021). Adaptive e-learning environment based on students' learning styles. *International Journal of Educational Technology in Higher Education*, 18. https://doi.org/10.1186/s41239-021-00289-4

Fakir, M. S. B., Azman, H. A. B., & Zahid, A. Z. B. M. (2024). Exploring Online Group Work through Connectivism Theory. *International Journal of Academic Research in Business and Social Sciences*, 14(8), 2556–2569. https://doi.org/10.6007/IJARBSS/v14-i8/21945

Gransden, C., Hindmarsh, M., Lê, N. C., & Nguyen, T.-H. (2024). Adaptive learning through technology: a technical review and implementation. *Higher Education, Skills and Work-Based Learning*, 14(2), 409–417. https://doi.org/10.1108/HESWBL-05-2023-0121

Husnan, Riayatul, Rofiq Hidayat, and Machfudz. (2023). "Manajemen Konflik Madrasah Pasca Pandemi Covid- 19 Di Wilayah Tapal Kuda". *Re-JIEM (Research Journal of Islamic Education Management)* 6 (1), 74-85. https://doi.org/10.19105/re-jiem.v6i1.8587.

Ismail, M. I. (2020). *Evaluasi Pembelajaran: Konsep Dasar, Prinsip, Teknik, dan Prosedur*. Raja grafindo Persada. https://repository.unissula.ac.id/22627/10/DAFTAR%20PUSTAKA.pdf

Kurniawan, H., & Hasanah, E. (2021). Peran Kepala Sekolah dalam Meningkatkan Inovasi dan Kreativitas Guru pada Masa Pandemi di SD Muhammadiyah Bantul Kota. *Jurnal Studi Guru Dan Pembelajaran*, *4*(1), 56–66. https://doi.org/10.30605/jsgp.4.1.2021.476

Kusumawati, K. (2023). Pemanfaatan Teknologi Informasi dalam Pendidikan. *Jurnal Limits*, 5(1), 7–14. https://doi.org/10.59134/jlmt.v5i1.311

Martin, M. (2023). The Advantages and Disadvantages of Online Classes. *Thinkific*. https://www.thinkific.com/blog/advantages-and-disadvantagesonline-classes/

Muhasim. (2017). Pengaruh Teknologi Digital terhadap Motivasi Belajar Peserta Didik. *PALAPA*, 5(2), 268–273. https://doi.org/10.36088/palapa.v5i2.46

Mukhlis, H., Haenilah, E. Y., Sunyono, et al. (2024). Connectivism and digital age education: Insights, challenges, and future directions. *Kasetsart Journal of Social Sciences*, 45(3), 803–814. https://doi.org/10.44217/kjss.2024.803

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology & Distance Learning*, 2(1), 3–10. https://www.scirp.org/reference/referencespapers?referenceid=148504

Simon, P. D., & Zeng, L. M. (2024). Behind the scenes of adaptive learning: A scoping review of teachers' perspectives. *Education Sciences*, 14(12), 1413. https://doi.org/10.3390/educsci14121413

Slamet. (2022). Peran Kepala Sekolah dalam Membangun Citra Publik pada Era 5.0. *DIAJAR: Jurnal Pendidikan dan Pembelajaran*, 1(3), 268–273. https://doi.org/10.54259/diajar.v1i3.963

Widodo, H. (2019). Kepemimpinan Kepala Sekolah Perempuan. *Pedagogia: Jurnal Pendidikan*, 8(1), 127–137. https://doi.org/10.21070/pedagogia.v8i1.1871

Xie, H., Chu, H. C., Hwang, G. J., & Wang, C. C. (2019). Trends and development in technology-enhanced adaptive/personalized learning. *Computers & Education*, 140, 103599. https://doi.org/10.1016/j.compedu.2019.103599

Xu, C. (2021). Thoughts on the Implementation of Online and Offline Hybrid Teaching of University Computer Courses. *Region - Educational Research and Reviews*, 3(2), 1–4. https://doi.org/10.32629/rerr.v3i2.291