

Article

Implementation of link and match policy to enhance employment of graduates: A case study in vocational high schools

Saryadi Saryadi*, Irfan Ridwan Maksum, Vishnu Juwono

Faculty of Administrative Sciences, University of Indonesia, Depok 16424, Indonesia

* **Corresponding author:** Saryadi Saryadi, saryadi@ui.ac.id

CITATION

Saryadi S, Maksum IR, Juwono V. (2024). Implementation of link and match policy to enhance employment of graduates: A case study in vocational high schools. *Journal of Infrastructure, Policy and Development*. 8(8): 5601. <https://doi.org/10.24294/jipd.v8i8.5601>

ARTICLE INFO

Received: 2 April 2024

Accepted: 21 May 2024

Available online: 28 August 2024

COPYRIGHT



Copyright © 2024 by author(s). *Journal of Infrastructure, Policy and Development* is published by EnPress Publisher, LLC. This work is licensed under the Creative Commons Attribution (CC BY) license. <https://creativecommons.org/licenses/by/4.0/>

Abstract: This study aims to explore the link and match policy through industrial classes and its impact on the competence and employability of Vocational High School (VHS) graduates. The importance of this research is to address the gap between education and industry by assessing the effectiveness of industrial classes in improving the skills and employability of VHS graduates. Horison Industrial Class (HIC) in 4 schools, namely: (1) SMKN 57 Jakarta, 2 batches of Hospitality expertise programs; (2) SMKN 6 Yogyakarta, there are 3 batches of Hospitality expertise programs; (3) SMKN 6 Semarang, there are 2 batches of Hospitality expertise programs; (4) SMKN 2 Semarang. This research emphasizes the important role of industry involvement and commitment in aligning the curriculum with industry needs. The field findings show that the implementation of the link and match policy through industrial classes significantly affects the quality of learning in VHS. The study also highlights the influence of government support and industry associations in ensuring the successful implementation of industrial classes. Student participation in industry classes directly enriches their learning experiences by allowing them to engage in direct practice in a real work environment. These findings can contribute to the implementation of policies and regulations in the field of education, especially in the context of vocational education. The findings of this study can also be applied to vocational students to improve the quality of graduates in order to meet the qualification standards of employees in companies or industries.

Keywords: implementation of policy; link and match; empowerment of graduates; vocational high school

1. Introduction

Human resource development has been recognized as one of the pillars of national development aimed at increasing workforce productivity and competitiveness. Vocational education, including Vocational High Schools (VHS), plays a crucial role in preparing skilled workers capable of mastering applied skills, thus contributing to a productive and competitive workforce. VHS has a close connection to the labour market, making it a key player in bridging the gap between education and the workforce. Competence-based vocational education has been a focus in Indonesia, with efforts to evaluate and improve its effectiveness (Zhang and Zhao, 2020). Studies have shown that the type of high school attended can impact labor market outcomes, with public junior secondary school students performing better in national examinations (Ismail et al., 2022). The policies and political development of vocational education in Indonesia have been explored, shedding light on the historical perspective of this crucial area (Jumintono et al., 2018). An integrated solution model has been proposed to enhance the competitiveness and

relevance of vocational education in the face of technological disruptions (Zurqoni et al., 2018). These references collectively provide insights into the landscape of vocational education in Indonesia, highlighting its importance in human resource development and national competitiveness.

Presidential Instruction Number 9 of 2016 on the Revitalization of Schools emphasizes the government's commitment to mobilize support from ministries and agencies towards VHS to produce skilled and competitive workers. This policy initiative reflects the government's emphasis on the importance of vocational education in meeting labour market demands and driving economic development (Yahya et al., 2023). The Indonesian government has committed to revitalizing schools through various initiatives, including the "*Merdeka Belajar*" (Emancipated Learning) movement, which aims to improve the quality of education and human resources in the country (Tahiri and Muhaxheri, 2020). The government has also emphasized the importance of Technical Vocational Education and Training (TVET) as part of President Joko Widodo's program in his first term (2014–2019). In 2016, the President issued a Presidential Instruction number 9 of 2016 on the Revitalization of Vocational Schools to improve the quality of Indonesian human resources. The government has also shown a commitment to inclusive education, which aims to provide equal access to students from different social and economic backgrounds, including persons with disabilities (Yuyik Lulita Sari et al., 2019). The government has also set a goal to shift the ratio of students enrolled in general senior secondary education to those in vocational schools, with a priority given to schools in the fields of marine and fisheries (Jumintono et al., 2018). Additionally, the government has established a Professional Certification for graduates of VHS to mark their expertise in their respective fields. The Indonesian Ministry of Education has acknowledged the need for a competency-based, demand-driven, public-private partnership, and incentive system to attract corporations to pay attention to vocational education (Gunarso et al., 2023). The government is also working to improve the quality of work-based learning, particularly apprenticeships, as a viable response to skills mismatch (Thompson et al., 2021).

The implementation of the link and match policy requires clear collaborative governance to accommodate government goals, market needs, and workplace conditions. This approach aims to align the skills taught in educational institutions with industry needs, facilitating a smoother transition for students into the workforce (Hartanto et al., 2020). In the context of vocational education, the implementation of the link and match policy between VHS and the industry is manifested, among other things, through industry class programs (Kamaruddin et al., 2024). These programs serve as a bridge between educational institutions and industries, providing students with relevant skills and practical experience for their future careers in the industry sector. The unemployment rate among vocational high school graduates in Indonesia is not explicitly mentioned in the search results provided (Supeni et al., 2019). However, it is mentioned that there is a high demand for graduates from vocational schools, as they are prepared with practical skills and experience relevant to their future careers in various sectors (Nashar et al., 2020). The Indonesian government is also prioritizing the revitalization of vocational training as a crucial step in improving the country's human resources. This initiative aims to provide quicker

access to job-ready skills, align with the specific needs of the job market, and cater to all segments of society (Sulaiman et al., 2020).

There is a lack of proper policy implementation among various stakeholders, including educational institutions, employers, government agencies and community organizations. The effectiveness of vocational education and training in Indonesia is hampered by the lack of proper policy implementation among various stakeholders, including educational institutions, employers, government agencies and community organizations (Mustafa et al., 2019). Despite the government's commitment to vocational education, there are still challenges in translating policies into impactful actions (Roll and Ifenthaler, 2021). These gaps in implementation can lead to problems such as inadequate coordination among stakeholders, insufficient resource allocation and limited monitoring and evaluation mechanisms.

Lack of alignment between existing curriculum in schools and existing industry needs. The lack of alignment between the existing curriculum in schools and industry needs is a significant challenge that hinders the effectiveness of vocational education and training programs (Suryono et al., 2020). This issue has been addressed in various studies that highlight the importance of aligning curricula with industry needs to ensure that graduates are equipped with relevant skills and competencies demanded by the job market (Maknun and Marwiah, 2022), educational standards and emphasize the need for further investigation into curriculum alignment. Park and Yu (2023) discuss how schools strategically manage external demands, including curriculum alignment, to achieve coherence in education.

The unemployment rate among vocational high school graduates remains relatively high, as indicated by previous research findings. The unemployment rate of VHS graduates in Indonesia was still quite high, reaching 15% in 2019. Mismatch between supply (vocational high schools) and industry demand is a challenge in reducing the unemployment rate of VHS graduates (Park and Yu, 2023). The mismatch between the skills taught in VHS and industry needs has led to a gap between the supply and demand for skilled labour in certain sectors. Although there is cooperation between vocational high schools and industries, it is still not fully effective in improving the quality of VHS graduates. This was found in a study by Mahfud et al. (2022), which stated that the cooperation between VHS and industries has not yet yielded significant results in improving the skills and knowledge of students according to labor market needs. Industries have not fully shown their commitment to supporting the development of vocational high schools. Although there are some forms of cooperation between industries and vocational high schools, there are still shortcomings in financial support and the development of vocational education programs (Purwanto et al., 2023). The optimal role of Vocational High Schools in supporting human resources preparation has not yet been fully achieved. Although Vocational High Schools have sought to improve the quality of vocational education, there are still shortcomings in adjusting the curriculum to the rapidly growing industry's needs (Siswanto et al., 2023). The implementation of the link and match policy aims to achieve alignment between industry needs and the workforce, thereby producing quality and job-ready VHS graduates. One method of implementing the link and match policy is through the establishment of industry

classes, which aims to strengthen the relationship between schools and industries and improve the quality of VHS graduates (Lee, 2020). Analysis of the implementation of the link and match policy, particularly in the context of VHS, is conducted through a case study of industry classes as a concrete manifestation of collaboration between schools and the industry. This study aims to explore the effectiveness of implementing the link and match policy in ensuring that VHS graduates, especially in the sector, can obtain employment matching their skills.

This research aims to analyze the gap between the world of education and industry by assessing the effectiveness of industrial classes in improving the skills and employment opportunities of VHS graduates. Seeing the gap between the world of education and the growing industry standards, this research is important to be carried out immediately so that it can be immediately implemented in the applicable learning curriculum. To increase the effectiveness of learning in particular vocational education in vocational schools. This research explores the implementation of the link and match policy through industrial classes and its impact on the competence and employability of Vocational High School (VHS) graduates that have not been in previous studies.

2. Research methodology

This study uses a qualitative approach in its research design. As research informants, this study involves Program Type VHS principals, representatives from partner industries, central government officials from three relevant ministries, provincial governments, and representatives from industry associations. This research focuses on the phenomenon of various factors related to the collaborative platform of the tourism industry with VHS Tourism. The criteria for informants selected were VHS in the field of tourism, including principals, vice principals, and teachers, Regional Governments that handle the field of VHS and tourism, such as heads of fields/sessions and staff, Ministries and Institutions in the field of VHS and tourism, tourism industry, both small and large scale in five priority areas of tourism development. In order to improve the competence of students in the hospitality sector, LLC. Metropolitan Golden Management (PT MGM) is not only limited to providing opportunities for VHS students to carry out Field Work Practice (FWP) activities in Horison Group Hotel units, but more than that the company has opened Horison Industrial Class (HIC) in 4 schools, namely: (1) SMKN 57 Jakarta, 2 batches of Hospitality expertise programs; (2) SMKN 6 Yogyakarta, there are 3 batches of Hospitality expertise programs; (3) SMKN 6 Semarang, there are 2 batches of Hospitality expertise programs; (4) SMKN 2 Semarang, there is 1 batch of Hotel Accounting expertise program.

In-depth interviews are used as the main method of data collection, allowing researchers to gain a deep understanding of the perspectives and experiences of informants regarding the implementation of the link and match policy. In analysing the data, a narrative approach is used, where the collected data is organized and analysed descriptively and interpretively to reveal patterns, themes, and relevant relationships to the research objectives. This approach allows researchers to understand the broader context surrounding the implementation of the link and

match policy between vocational high schools and the industry, as well as its implications for improving the quality of graduates and alignment with labour market needs.

3. Results

The description of the general description of the object of this study includes several important policy aspects related to the concept of link and match between Vocational High Schools (VHS) and the tourism industry, as well as the role of PT. MGM as the implementation partner of the Horizon Industrial Class (HIC). First, the link and match policy is a strategy designed to ensure that the curriculum and vocational education programs in vocational schools are in accordance with the needs and demands of the tourism industry. Thus, VHS students will be prepared with skills and knowledge relevant to the world of work. PT MGM, as one of the major companies in the tourism industry, has a crucial role in the implementation of HIC. The company not only cooperates with VHS, but also provides facilities, resources, and practical guidance for students during the program. Through this partnership, PT. MGM contributes significantly in helping students develop the skills and experience necessary for success in the tourism industry. In addition, PT MGM also acts as a partner in policy making and curriculum development of HIC. With the support and collaboration of PT MGM, VHS can ensure that the HIC program remains relevant and responsive to changes and developments in the tourism industry. Overall, the partnership between VHS and PT MGM in the implementation of HIC reflects a shared commitment to improve the quality of vocational education and prepare the younger generation for success in the world of work. With support from leading companies such as PT MGM, HIC programs can continue to grow and provide tangible benefits for students and the tourism industry as a whole.

Horison Industrial Class is an initiative dedicated to vocational students who take part in the Hotel Industry Class (HIC) program, which aims to provide an in-depth understanding and mastery of skills relevant to the world of work in the hospitality sector, especially in the Horison Hotels Group environment. This class is designed for 133 Indonesian Universities providing students with not only the general curriculum given in schools, but also an in-depth understanding of the specific principles and practices in the hospitality industry at Horison Hotels Group. To achieve this goal, several Head of Department (HoD) of PT MGM are also actively involved in the teaching process for Horison Industrial Class students. Thus, this class provides a more thorough and practical learning experience for students in preparing themselves for careers in hospitality. This collaboration is marked by a Memorandum of Understanding between PT MGM Hotel Horison Group and the Directorate General of Primary and Secondary Education of the Ministry of Education and Culture Number 07/IV/NK/2019 and a Cooperation Agreement between PT MGM and the Director General of Vocational High School Education Number 09/IV/PKS/2019 concerning Increasing Competency in the Hospitality Sector. PT. Metropolitan Golden Management (PT MGM-Horison Group Hotel) is committed to supporting government programs in terms of absorbing students who graduated from Vocational High Schools (VHS), especially vocational schools who

have competencies and expertise in Hospitality, Housekeeping, Financial Accounting, Engineering, Office Admin, Multimedia and Digital Marketing. In order to improve the competence of students in the hospitality sector, PT MGM is not only limited to providing opportunities for VHS students to carry out Field Work Practice (FWP) activities in Horison Group Hotel units, but more than that the company has opened Horison Industrial Class (HIC) in 4 schools, namely: (1) SMKN 57 Jakarta, 2 batches of Hospitality expertise programs; (2) SMKN 6 Yogyakarta, there are 3 batches of Hospitality expertise programs; (3) SMKN 6 Semarang, there are 2 batches of Hospitality expertise programs; (4) SMKN 2 Semarang, there is 1 batch of Hotel Accounting expertise program.

Each batch has 36 students or 1 study group. Prior to launching the Hotel Industry Expertise Program (HIC), PT. Metropolitan Golden Management (PT. MGM-Horison Group Hotel) collaborates with a number of selected vocational schools that are the location of this program. The purpose of the collaboration is to harmonize the curriculum so that graduates from the HIC program are ready to dive directly into the world of the hospitality industry. The main advantage of this HIC program is that in addition to the material taught by teachers in VHS, students also get additional lessons about Front Office Department, Housekeeping Department, Food and Beverage Product, and Food and Beverage Service taught directly by managers from Horison Group Hotel units. Hands-on practice at hospitality industry locations is also an integral part of the program. Another advantage is that graduates of the HIC program have the opportunity to join as employees in Horison Group Hotel units.

Based on field findings from all vocational schools involved in the HIC program, namely SMKN 6 Yogyakarta, SMKN 57 Jakarta, SMKN 6 Semarang, and SMKN 2 Semarang, it was found that there was a joint forum as a means for evaluation, coordination, and monitoring of the Horison Industrial Class (HIC) program. At SMKN 6 Yogyakarta, there are regular evaluations and the existence of WhatsApp (WA) groups as a forum to communicate and coordinate between various parties related to the HIC program. 150 University of Indonesia Meanwhile, at SMKN 57 Jakarta, a joint forum was also present in the form of periodic meetings and coordination led by Horison management. In addition, SMKN 57 Jakarta also uses WhatsApp groups to report and coordinate the development of the HIC program. This finding shows that the existence of a joint forum, both in the form of routine evaluations and WhatsApp groups, is an effective means of facilitating communication, coordination, and monitoring between various relevant parties in the implementation of the HIC program in these schools. The implementation of HIC at SMKN 57 has also built a holistic education ecosystem not only for students, but for local teachers. This is among others known based on the statement of the Head of SMKN 57, "Our teachers are given in-house training by MGM..." interview results Valentina Purnama Dewi, M.Pd.

Field findings indicate that the implementation of the link and match policy through industry classes significantly influences the quality of learning in Vocational High Schools (VHS). According to a study conducted by McCrocklin (2020), student participation in industry classes directly enriches their learning experiences by allowing them to engage in direct practice in a real work environment. This is

also supported by recent research by Amiron et al. (2019) which found that students involved in industry classes tend to have a deeper understanding of the skills and knowledge required in specific industries. Additionally, field findings also show that the implementation of the link and match policy through industry classes has a positive impact on the employment of VHS graduates. Students who have work practice experience in the industry during their education tend to have higher success rates in entering the job market. This emphasizes the importance of industry classes in preparing VHS graduates for the real world of work. From the industry perspective, the implementation of industry classes provides significant benefit. Participation in industry classes allows industries to be directly involved in the education and training of future workforce, which in turn helps create a more skilled workforce aligned with industry needs. However, cooperation in industry classes between VHS and industries does not occur instantly. Highlights the importance of commitment and support from all relevant parties, including schools, industries, and government, to ensure the success of implementing the link and match policy through industry classes. Additionally, the industry specifically benefits from the existence of industry classes. Industry classes in the sector help prepare students with relevant and up-to-date skills, thus helping meet the evolving needs of the industry workforce. Thus, these field findings indicate that the implementation of the link and match policy through industry classes has a significant impact not only on the quality of learning in VHS and employment of graduates but also provides tangible benefits to industries. However, efforts to improve the quality of education require commitment and support from all relevant parties to achieve optimal results.

While collaboration with industry can lead to more relevant and practical learning experiences, there is a potential risk that the curriculum may become too focused on the needs of current industry, possibly at the expense of broader education and adaptability for future industry changes. A strong focus on vocational training and industry classes could potentially lead to a reduction in emphasis on traditional academic subjects. This may affect students' broader educational development and limit their options for future learning paths or career changes. Schools should strive for a balanced curriculum that includes both vocational training and traditional academic subjects to provide a well-rounded education and adaptable skills for future challenges. Increased industry involvement in education may lead to a situation where industry interests have undue influence over the educational process, potentially prioritizing short-term skills over long-term educational goals and critical thinking. Partnerships with industry must be regularly evaluated to ensure that industry classes meet educational standards and align with current and future industry needs.

4. Discussion

Efforts to address these challenges require a comprehensive approach that involves enhancing stakeholder collaboration, improving policy implementation strategies, and encouraging multi-stakeholder engagement. Stakeholder collaboration plays an important role in ensuring alignment of goals and actions among the various entities involved in vocational education and training (Kummanee et al., 2020).

Effective policy implementation strategies are essential to translate policy directives into tangible results on the ground (Kreisman and Stange, 2020). In addition, multi-stakeholder collaboration can enhance the success of vocational education initiatives by leveraging the strengths and resources of various partners. To overcome the barriers associated with vocational education policy implementation, it is crucial to strengthen coordination and communication among stakeholders, allocate adequate resources, and establish strong monitoring and evaluation mechanisms (Jian, 2021). By addressing these challenges, Indonesia can improve the quality and relevance of vocational education and training programs, ultimately contributing to the development of a skilled and competitive workforce in Indonesia. Industry classes can improve the employment of VHS graduates by providing them with relevant and directly applicable skills in the workforce, thus reducing the unemployment rate among VHS graduates (Barabasch et al., 2021; Jamil et al., 2023). Additionally, industry classes can also reduce the mismatch between VHS and industries by ensuring that the curriculum taught in VHS aligns with industry needs, thus enabling graduates to be easily absorbed by the job market. Factors affecting the implementation of the link and match policy through industry classes include commitment and support from various stakeholders, synergy between VHS and industries, and the existence of information systems supporting the exchange of information and knowledge between both parties (Banha et al., 2022; Wang, 2020). Employment Opportunities with industry classes can provide students with practical skills that directly translate to job opportunities, reducing the unemployment rate among graduates. Synergy between VHS and industries fosters a more coordinated approach to education and workforce development.

The study by Warikoo and Allen (2019) emphasizes the need to study curriculum enactment as an important aspect of curriculum alignment. The framework to bridge the gap between school curriculum outcomes and market skills, with a focus on alignment. In addition, Mustafa et al. (2019) discuss the use of electronic platforms for curriculum mapping to effectively address alignment challenges. Industries are actively involved in improving the quality of learning in VHS through industry classes by contributing resources, training, and practical experience to VHS students (Wang, 2024). This not only improves the quality of education in VHS but also ensures that graduates have skills aligned with industry needs. The importance of aligning curriculum with industry needs to ensure that education programs meet workforce demands and contribute to the development of a skilled and competitive workforce (Vogelsang et al., 2021). Addressing the lack of alignment between curriculum and industry needs is critical to improving the relevance and effectiveness of vocational education and training programs in preparing students for successful careers. VHS can meet the human resource needs of the hospitality industry through industry classes by providing a curriculum oriented towards the needs of the industry and providing students with direct practice opportunities in the hospitality industry (Gao and Zhang, 2020). The practical implications of policy implementation strategies, Regular assessments of policies can lead to adaptive strategies that respond to changing industry and educational needs. Well-planned strategies can translate policies into practical steps that benefit students, such as offering industry-relevant courses and internships.

Industries benefit from the existence of industry classes as they can access trained and ready-to-use workforce in the long run, thus increasing their productivity and competitiveness. Industries benefit from the existence of industry classes as they can access trained and ready-to-use workforce in the long run, thereby increasing their productivity and competitiveness (Venkatraman et al., 2018). Indonesia's food and beverage and automotive manufacturing industries, which have high relevance to Industrial Revolution 4.0 (4IR) technologies, are expected to benefit significantly from the transformation effects of 4IR if there is adequate investment in jobs, skills and training (Chou et al., 2018). On-the-job training is considered a very important form of skills development in these industries, combined with better training opportunities within formal training institutions (Benešová and Tupa, 2017). The Indonesian government has also emphasized the importance of vocational education and training (VET) as part of its commitment to improving the quality of human resources in Indonesia (Wilk et al., 2020). Thus, these research findings provide important contributions to understanding how the implementation of the link and match policy through industry classes can bridge the gap between education and industry, as well as the factors affecting its implementation.

5. Conclusion

This study shows results and conclusions that the implementation of the link and match policy through industry classes has a significant impact on improving the quality and employment of Vocational High School (VHS) graduates. The participation and commitment of industries are crucial factors in achieving alignment between educational curriculum and industry needs. Additionally, support from the government and industry associations also influences the success of industry class implementation. These findings have important implications as a basis for implementing policies to achieve link and match and contribute to scholarly knowledge in the field of educational policy, especially VHS. This study also provides valuable input for stakeholders in implementing policies for link and match in various industrial sectors. contribute to policy implementation and scholarly discourse in the field of education, particularly in the vocational education context. However, it should be noted that this study has limitations, especially in the context of the hospitality industry and the limited research locations in only three cities. Therefore, conditions in other fields and locations may vary and further research is needed to gain a more comprehensive understanding. The findings of this study can also be applied to vocational students to improve the quality of graduates in order to meet the qualification standards of employees in companies or industries.

Author contributions: Conceptualization, IRM, SS and VJ; methodology, IRM; software, SS; validation, SS, VJ and IRM; formal analysis, SS; investigation, IRM; resources, VJ; data curation, IRM; writing—original draft preparation, SS; writing—review and editing, SS; visualization, VJ; supervision, IRM; project administration, VJ. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

References

- Amiron, E., Latib, A. A., & Subari, K. (2019). Industry revolution 4.0 skills and enablers in technical and vocational education and training curriculum. *International Journal of Recent Technology and Engineering*, 8(1C2), 484–490.
- Anticipating and Preparing for Emerging Skills and Jobs. (2020). In B. Panth & R. Maclean (Eds.), *Education in the Asia-Pacific Region: Issues, Concerns and Prospects*. Springer Singapore. <https://doi.org/10.1007/978-981-15-7018-6>
- Banha, F., Coelho, L. S., & Flores, A. (2022). Entrepreneurship Education: A Systematic Literature Review and Identification of an Existing Gap in the Field. *Education Sciences*, 12(5), 336. <https://doi.org/10.3390/educsci12050336>
- Barabasch, A., Bohlinger, S., & Wolf, S. (2021). Reconstructing policy transfer in adult and vocational education and training. *Research in Comparative and International Education*, 16(4), 339–360. <https://doi.org/10.1177/17454999211062825>
- Benešová, A., & Tupa, J. (2017). Requirements for Education and Qualification of People in Industry 4.0. *Procedia Manufacturing*, 11, 2195–2202. <https://doi.org/10.1016/j.promfg.2017.07.366>
- Chen, Z., Yang, Z., Li, Y., et al. (2021). Strategies for Constructing College Students' Entrepreneurial Value Judgments Based on Educational Psychology. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.657791>
- Chou, C.-M., Shen, C.-H., Hsiao, H.-C., et al. (2018). Industry 4.0 Manpower and its Teaching Connotation in Technical and Vocational Education: Adjust 107 Curriculum Reform. *International Journal of Psychology and Educational Studies*, 5(1), 9–14. <https://doi.org/10.17220/ijpes.2018.01.002>
- Gao, F., & Zhang, P. (2020). Performance Evaluation of Industry-Education Integration in Higher Vocational Colleges: An Evidence from China. *International Journal of Emerging Technologies in Learning (IJET)*, 15(23), 208. <https://doi.org/10.3991/ijet.v15i23.19025>
- Gunarso, G., Sandra, L., & Yap, M. (2023). Determinants for participation in independent learning policy and independent campus programs. *International Journal of Evaluation and Research in Education (IJERE)*, 12(3), 1507. <https://doi.org/10.11591/ijere.v12i3.24320>
- Hartanto, S., Arifin, Z., Ratnasari, S. L., et al. (2020). Developing Lean Manufacturing Based Learning Model to Improve Work Skills of Vocational Students. *Universal Journal of Educational Research*, 8(3A), 60–64. <https://doi.org/10.13189/ujer.2020.081408>
- Ismail, M., Khatibi, A., & Azam, S. M. F. (2022). Impact of School Culture on School Effectiveness in Government Schools in Maldives. *Participatory Educational Research*, 9(2), 261–279. <https://doi.org/10.17275/per.22.39.9.2>
- Jamaludin, K. A., Alias, N., Dewitt, D., & Razzaq, A. R. A. (2019). Framework for technical communication skills content development for students in malaysian vocational colleges: A fuzzy delphi study. *Journal of Technical Education and Training*, 11(4), 36–44.
- Jian, L. (2021). Examining Macro-Policy Development Stages of Vocational Education in China: A Retrospective Policy Analysis. *Beijing International Review of Education*, 3(3), 487–492. <https://doi.org/10.1163/25902539-03030005>
- Jumintono, J., Suyatno, S., Zuhary, M., et al. (2018). Vocational Education Principal of Leadership: A Case Study in East Nusa Tenggara. *The Journal of Social Sciences Research, SPI6*, 825–831. <https://doi.org/10.32861/jssr.spi6.825.831>
- Jumintono, Suyatno, Zuharty, M., & Said, H. (2018). Vocational schools leadership reinforcement model. *Indian Journal of Public Health Research & Development*, 9(11), 1549. <https://doi.org/10.5958/0976-5506.2018.01669.8>
- Kamaruddin, E., Salman, I., Annahidl, N., et al. (2024). Investigating the role of digital transformation and digital innovation on school performance. *International Journal of Data and Network Science*, 8(3), 1557-1566.
- Kreisman, D., & Stange, K. (2020). Vocational and career tech education in american high schools: The value of depth over breadth. *Education Finance and Policy*, 15(1), 11–44. https://doi.org/10.1162/edfp_a_00266
- Kummanee, J., Nilsook, P., & Wannapiroon, P. (2020). Digital Learning Ecosystem Involving STEAM Gamification for a Vocational Innovator. *International Journal of Information and Education Technology*, 10(7), 533–539. <https://doi.org/10.18178/ijiet.2020.10.7.1420>
- Mahfud, T., Aprily, N. M., Saputro, I. N., et al. (2022). Developing and validating the multidimensional industry commitment scales: The perspective of vocational high school students. *International Journal of Evaluation and Research in Education (IJERE)*, 11(1), 361. <https://doi.org/10.11591/ijere.v11i1.21840>
- Maknun, J., & Marwiah, M. (2022). Remediation of Misconceptions Vocational High School Students on the Concept of Static Fluids using the Conceptual Change Model. *Journal of Technical Education and Training*, 14(2). <https://doi.org/10.30880/jtet.2022.14.02.005>

- McCrocklin, S. (2020). Comparing experiential approaches: Structured language learning experiences versus conversation partners for changing pre-service teacher beliefs. *International Journal of Society, Culture and Language*, 8(1), 70–81.
- Mohd. Jamil, Mohd. R., Mohamed Hasyim, A. T., Othman, Mohd. S., et al. (2023). Digital Pedagogy Policy in Technical and Vocational Education and Training (TVET) in Malaysia: Fuzzy Delphi Approach. *Journal of Technical Education and Training*, 15(2). <https://doi.org/10.30880/jtet.2023.15.02.001>
- Mustafa, M. Z., Buntat, Y., Ahad, R., et al. (2019). Job Satisfaction Survey: A Confirmatory Factorial Analysis Based on Vocational Colleges Teachers Sample. *Journal of Technical Education and Training*, 11(3). <https://doi.org/10.30880/jtet.2019.11.03.017>
- Nashar, N. A. B., Jumintono, J., Pudyastuti, R. R., et al. (2020). Increasing Understanding of General Knowledge of Plastics with Video-based Learning. *Universal Journal of Educational Research*, 8(11B), 5913–5917. <https://doi.org/10.13189/ujer.2020.082225>
- Park, K. H., & Yu, J. (2023). Labor market performance gaps and the role of secondary vocational education at meister high school in Korea. *Cogent Education*, 10(1). <https://doi.org/10.1080/2331186x.2023.2168407>
- Purwanto, A., Purba, J., Bernarto, I., & Sijabat, R. (2023). Investigating the role digital transformation and human resource management on the performance of the universities. *International Journal of Data and Network Science*, 7(4), 2013–2028.
- Roll, M., & Ifenthaler, D. (2021). Learning Factories 4.0 in technical vocational schools: can they foster competence development? *Empirical Research in Vocational Education and Training*, 13(1). <https://doi.org/10.1186/s40461-021-00124-0>
- Siswanto, E., Samsudi, S., Suprpto, E., et al. (2023). The role of transformational leadership, work environment, motivation on job satisfaction and teachers performance of vocational schools. In: *AIP Conference Proceedings*. AIP Publishing.
- Sulaiman, W. M. H. B., Jumintono, J., Wahyuniati, C. F. S., et al. (2020). Quickly Understanding on Progressive Muscle Relaxation with Video-based Learning in Secondary School Students. *International Journal of Human Movement and Sports Sciences*, 8(5), 181–185. <https://doi.org/10.13189/saj.2020.080504>
- Supeni, S., Hakim, L., & Jumintono. (2019). Strengthening character education of early childhood through javanese traditional game dakon. *International Journal of Recent Technology and Engineering*, 7(6), 243–249.
- Suryono, J., Wijaya, M., Irianto, H., & Harisudin, M. (2020). Mind-set empowerment through enforcement of oriented visions, values, and measurable goals for young entrepreneurs. *Talent Development and Excellence*, 12(1), 1396–1406.
- Tahiri, L., & Muhaxheri, N. (2020). Stylistics as a tool for critical language awareness. *Dil ve Dilbilimi Çalışmaları Dergisi*, 16(4), 1735–1746. <https://doi.org/10.17263/jlls.850989>
- Thompson, M., Pawson, C., & Evans, B. (2021). Navigating entry into higher education: the transition to independent learning and living. *Journal of Further and Higher Education*, 45(10), 1398–1410. <https://doi.org/10.1080/0309877x.2021.1933400>
- Varaksin, A. N., Konstantinova, E. D., Maslakova, T. A., et al. (2022). An Analysis of the Links between Smoking and BMI in Adolescents: A Moving Average Approach to Establishing the Statistical Relationship between Quantitative and Dichotomous Variables. *Children*, 9(2), 220. <https://doi.org/10.3390/children9020220>
- Venkatraman, S., de Souza-Daw, T., & Kaspi, S. (2018). Improving employment outcomes of career and technical education students. *Higher Education, Skills and Work-Based Learning*, 8(4), 469–483. <https://doi.org/10.1108/heswbl-01-2018-0003>
- Vogelsang, B., Röhrer, N., Fuchs, M., et al. (2021). Cooperation Between Learning Venues and its Limits: The Hotel Industry in Cancún (Mexico). *International Journal for Research in Vocational Education and Training*, 8(4), 67–89. <https://doi.org/10.13152/ijrvet.8.4.4>
- Wang, W. (2024). Optimization of the path of industry-teaching integration in vocational education based on ADDIE model. *Applied Mathematics and Nonlinear Sciences*, 9(1). <https://doi.org/10.2478/amns-2024-0505>
- Wang, X. (2020). Research on Enhancing the Effectiveness of Entrepreneurship Education with Entrepreneurship Practice as a Carrier. *Creative Education*, 11(03), 275–284. <https://doi.org/10.4236/ce.2020.113021>
- Warikoo, N., & Allen, U. (2019). A solution to multiple problems: the origins of affirmative action in higher education around the world. *Studies in Higher Education*, 45(12), 2398–2412. <https://doi.org/10.1080/03075079.2019.1612352>
- Wilk, M., Rommel, S., Liauw, M. A., et al. (2020). Bildung 4.0: Herausforderungen für die Aus- und Fortbildung. *Chemie Ingenieur Technik*, 92(7), 983–992. Portico. <https://doi.org/10.1002/cite.202000022>
- Yahya, Muh., Isma, A., Alisyahbana, A. N. Q. A., et al. (2023). Contributions of Innovation and Entrepreneurship Education to Entrepreneurial Intention with Entrepreneurial Motivation as an Intervening Variable in Vocational High School Students. *Pinisi Journal of Entrepreneurship Review*, 1(1), 42–53. <https://doi.org/10.62794/pjer.v1i1.49>
- Yuyik Lulita Sari, Y., Lulita Sari, Y., Djum Noor Benty, D., et al. (2019). Internalization of Character Values in Learning at

- Institution of English Course. Proceedings of the 5th International Conference on Education and Technology (ICET 2019). <https://doi.org/10.2991/icet-19.2019.153>
- Zhang, R., & Zhao, X. (2020). The Application of Folk Art with Virtual Reality Technology in Visual Communication. *Intelligent Automation & Soft Computing*, 26(4), 783–793. <https://doi.org/10.32604/iasc.2020.010113>
- Zurqoni, Retnawati, H., Arlinwibowo, J., & Apino, E. (2018). Strategy and implementation of character education in senior high schools and vocational high schools. *Journal of Social Studies Education Research*, 9(3), 370–397. <https://doi.org/10.17499/jsser.01008>