JOVES (Journal of Vocational Education Studies)
VOL 8, No. 2, 2025, pp. 292-303
pISSN: 2614-7483 pISSN: 2614-7475 https://doi.org/10.12928/joves.v8i2.14002

Implementation of Dewey's and Prosser's Philosophy on Vocational Education in Indonesia

[1]Muchlas*, [2]Adhy Kurnia Triatmaja
Universitas Ahmad Dahlan, Indonesia.

Email: [1] muchlas.te@uad.ac.id*, [2] adhy.triatmaja@pvte.uad.ac.id
* Correspondence author

ARTICLE INFO

Article history
Received Jul 17, 2025
Revised Sep 27, 2025
Accepted Oct 01, 2025

Keywords
Vocational Education
Dewey's philosophy
Prosser's philosophy

ABSTRACT

This study aims to explore the implementation of the philosophical values of two influential figures, Dewey and Prosser, in the organization of vocational education in Indonesia. The research subjects consisted of 86 vocational school principals from Java Island, selected through purposive sampling. Data were collected using a questionnaire with a Likert Scale to assess the respondents' perceptions of the indicators of philosophical values implemented in schools. The data were analyzed using a quantitative method to present the underlying meanings and values of vocational education practices from the perspective of the two philosophers. The study's findings indicate that vocational education in Indonesia has incorporated many of Dewey's pragmatic philosophical values. However, its implementation has not yet been effective, particularly in relation to the values associated with the principles of learning by doing and experience-based skills. Similarly, the values of Prosser's philosophy, which emphasize the relationship between theory and practice, face challenges due to limited funding and a lack of investment in practical tools that meet industry standards. Nevertheless, vocational education holds significant potential for development if stakeholders can bridge the gap between theory and practice in the industrial world.

Introduction

Vocational education in nearly all countries today is facing significant challenges. One of the primary concerns is the disparity between the competencies of graduates and the requirements of the industrial sector. Various factors cause this mismatch, including poorly aligned curricula with labor market needs, limited industry involvement in vocational education processes (Düzgünçınar, 2025; Molele et al., 2024), inadequate practical training, and insufficient infrastructure and resources (Ali et al., 2020; Wirtu, 2020). Furthermore, negative public perceptions of vocational

education have exacerbated this situation (Sadiq, 2024). Another major challenge emerges from the manufacturing sectors' transition into the era of advanced fabrication technologies, commonly referred to as Industry 5.0. The rapid advancement of manufacturing technologies carries profound implications for workforce requirements. There is a growing demand for individuals with high-level technical skills, strong digital literacy, and the ability to collaborate effectively with intelligent machines. Experts predict that the future workforce will possess capabilities in fields that are not yet fully defined (Alojaiman, 2023). Unfortunately, many vocational education systems still fail to design and deliver curricula that genuinely meet labor market demands. As a result, vocational high school graduates often struggle to compete in the job market.

The quality of teachers and instructors also represents a significant challenge in vocational education. Many vocational teachers lack practical experience in industry, while the gap between the number and competency of productive subject teachers remains critically wide. As a result, teachers tend to focus on theoretical instruction and provide insufficient support for practical activities. Meanwhile, in the vocational school curriculum, the proportion of practical activities is greater than theoretical lessons.

Another critical issue facing vocational education is the lack of adequate facilities and practical equipment. One of the main obstacles in providing representative training infrastructure is budgetary constraints, particularly in developing countries. However, this phenomenon is not limited to the developing countries; even industrialized nations are grappling with similar challenges due to economic recessions and various global crises (Rahman et al., 2022). This situation prevents students from optimally developing practical skills necessary for real-world applications. In addition, vocational education systems in many countries are facing a growing challenge in the form of an overemphasis on technical skill acquisition. This narrowly focused approach tends to neglect the development of other essential competencies required by the labor market. As a result, vocational graduates often lack flexibility and are ill-equipped to adapt to the demands of modern employment or the evolving dynamics of the global economy (Aleksandrov et al., 2015).

From an institutional relations perspective, vocational education also suffers from weak linkages between educational institutions and industry. Whereas, such collaboration is one of the most vital mechanisms for knowledge and technology transfer, which can significantly enhance innovation and drive economic growth (Kleiner-Schaefer & Schaefer, 2022). However, establishing effective partnerships between schools and industry often proves challenging due to misaligned expectations, priorities, and objectives between the two sectors (Bjerregaard, 2010; Gilsing et al.,

2011; Muscio & Vallanti, 2014). As a result, although formal collaborations may exist, they are often symbolic and fail to produce meaningful outcomes. These weak institutional relationships negatively affect vocational graduates, as they reduce employability and limit opportunities for job creation (Zamal et al., 2017).

The various issues surrounding vocational education have directly contributed to the increasing unemployment rate among SMK graduates. This situation has led the public to develop negative perceptions of SMK education. Generally, people often view vocational high schools as a 'second-class' option compared to general high schools. Consequently, high-achieving students tend to show less interest in pursuing vocational education, while SMK graduates often receive less recognition and appreciation in the labor market.

The challenges in vocational education demand solutions from multiple perspectives—ranging from upstream, philosophical dimensions to downstream, technical aspects. However, to date, most analyses of vocational education issues remain concentrated on the downstream elements of the education system. Efforts to investigate the root causes at the upstream level, particularly through a philosophical lens, remain limited.

Historically, vocational education emerged as a response to the demand for skilled labor across various industrial sectors, particularly in the aftermath of the Industrial Revolution. The philosophy of pragmatism, introduced by Dewey, with its emphasis on direct experience and problem-solving, has significantly influenced vocational education—especially in areas such as curriculum development, teaching methods, assessment, and teacher training (Idiong, 2023). Furthermore, teachers and policymakers believe that the pragmatist approach better prepares students to navigate the challenges and opportunities of the modern world, while also promoting both individual success and societal advancement. Ideally, the implementation of vocational education should embody the core values of pragmatism, such as learning-by-doing (Preidyte, 2025), problem-solving and experience-based learning (Luo, 2024), social responsibility and citizenship, as well as continuous growth and adaptability (Y. Ye & Shih, 2021). Moreover, it also embodies principles of pragmatism that foster an environment conducive to the formation of authentic experiences and the development of students' critical thinking skills, as well as democratic values (Synytsia, 2020). Dewey likewise advocated for the integration of vocational and general education, both of which are essential for a holistic educational experience (Defalco, 2016). This view encourages educators and policymakers to integrate vocational training with broader intellectual and social development, rather than allowing it to exist in isolation. The central question that arises, then, is: to what extent

has vocational education in Indonesia truly adopted the principles of pragmatism as envisioned by Dewey in its actual practice?

The Implementation of Prosser's Second Theorem requires that vocational education employ tools, work procedures, and machinery that closely resemble those used in relevant industries, while prioritizing real-world tasks over simulated assignments (Eze & Chukwutem Onwusa, 2021). The primary objective is to create a learning experience that mirrors actual workplace environments, thereby enabling students to develop the skills and habits demanded by industry. This approach implies that vocational teachers must possess up-to-date work experience to ensure proficiency in operating modern equipment and employing tools identical to those currently utilized in the professional world. Moreover, instructors are encouraged to facilitate learning by assigning hands-on tasks that mirror fundamental job functions, rather than relying on artificial or simulated projects. The central emphasis is on aligning the skills taught with those expected by industry, thereby allowing learners to transition smoothly from training environments to the workforce with minimal adjustment.

Enhancing the capacity of vocational teachers can be achieved through various strategies, one of which is industry-based internships. Teacher internships represent a practical and cost-effective approach for providing first-hand experience in relevant and current industrial settings. Teachers can utilize the insights gained during such internships to align instructional content with industry needs and expectations. By applying this knowledge effectively, teachers can provide realistic examples of how to apply theoretical concepts in real-world work scenarios (Stephens, 2011). When supported with adequate equipment, work procedures, practical machinery, and competent instructors connected to industry, vocational education can effectively produce graduates with skills that align with labor market demands. However, a critical question arises: to what extent has vocational education in Indonesia, in its operational practice, truly adopted Prosser's Second Theorem?

In parallel, Prosser's Sixteenth Theorem underscores that sufficient financial support is a fundamental prerequisite for effective vocational education. Adequate funding ensures the availability of quality resources, the presence of competent instructors, and the development of training programs that are responsive to industry demands. Ultimately, this leads to the production of skilled graduates who make meaningful contributions to economic growth.

Funding has become a central concern in countries with well-established vocational education systems. Governments in countries such as Germany, Switzerland, and Singapore have built robust

and globally respected Technical and Vocational Education and Training (TVET) systems by providing substantial funding, making these nations frequently cited as benchmarks. For instance, the German government allocates over 120 million euros annually to support vocational education and training (Mack, 2015). With this level of investment, Germany has been able to maintain high standards in implementing TVET programs.

Other countries such as China, Thailand, and several Southeast Asian nations have also placed considerable emphasis on strengthening the TVET sector as a core component of their socio-economic development strategies. Across the African continent, countries such as Nigeria, Rwanda, and South Africa have actively taken steps to enhance their vocational education systems. Even in the island nations of the Caribbean, governments have endorsed vocational education funding as a means to develop human capital and improve workforce quality (Morris & Powell, 2013). The United Kingdom has similarly provided substantial financial incentives for the TVET sector (Gyimah, 2020). These various cases demonstrate that public investment in vocational education can yield substantial economic and social benefits (Jawara et al., 2019).

The global trend suggests that financial support is a fundamental determinant in the successful implementation of vocational education. Without adequate funding, the development of vocational education cannot reach its full potential. This phenomenon also shows that countries have, in effect, adopted Prosser's Sixteenth Theorem, especially as they take proactive steps to establish vocational education institutions. This fact prompts a critical reflection: Have policymakers in Indonesia aligned the establishment of vocational education with the principles outlined in Prosser's Sixteenth Theorem?

Method

The research subjects were principals of vocational high schools (SMK) across Java Island, Indonesia, selected through purposive sampling, with a total of 86 participants. The choice of this sampling method was based on considerations of accessibility for the researcher in reaching the schools designated as study sites. However, this technique has limitations, as the selected sample is not fully representative of vocational schools across Indonesia. Therefore, the generalization of this study's findings is more appropriately limited to the context of Java Island.

Data were collected through a questionnaire designed to capture respondents' perceptions of the actual conditions in their respective schools. The questionnaire explored aspects related to Dewey's philosophical values (10 indicators) and Prosser's philosophical values (15 indicators). A description of the indicators for Dewey's values is presented in Table 1 below.

Table 1. Indicators of Dewey's philosophical values

Notation	Description	Notation	Description
D1	Prinsip learning by doing	D6	Growth
D2	Problem-solving method	D7	Workplace adaptability
D3	Experience-based skills	D8	Critical thinking
D4	Social responsibility	D9	Democratic mindset
D5	Civic responsibility	D10	Integration with general education

Meanwhile, the description of the indicators reflecting the values contained in Prosser's philosophy is presented in Table 2 below.

Table 2. Indicators of Prosser's philosophical values

Notation	Description	Notation	Description
P1	School–industry tool similarity	P9	Productive teacher adequacy
P2	School–industry method similarity	P10	Graduate competency relevance
P3	School–industry machine similarity	P11	Operational fund adequacy
P4	Teacher internship in industry	P12	Development fund adequacy
P5	School–industry task similarity	P13	Infrastructure support adequacy
P6	Teaching factory ownership	P14	Competent teacher adequacy
P7	Student industry practice	P15	Teacher competency program
P8	Student industry adaptation	-	-

The questionnaire consisted of statements with response options provided on a Likert scale: Strongly Disagree, Disagree, Agree, and Strongly Agree, with corresponding scores of 1, 2, 3, and 4, respectively. The perception score for each indicator ranged from 0 to 1 and was calculated using the following formula:

$$S = \frac{1S_1 + 2S_2 + 3S_3 + 4S_4}{4N}$$

In the above equation, S represents the perception score for each indicator; S1, S2, S3, and S4 represent the number of respondents who selected Strongly Disagree, Disagree, Agree, and Strongly Agree on the Likert scale, respectively; and N represents the total number of respondents.". Based on the collected data, the extent to which Dewey's and Prosser's philosophical values have been

implemented in vocational schools was interpreted using descriptive quantitative analysis.

Result and Discussion

According to the collected data, this research illustrates the subjects' perceptions of 10 indicators representing Dewey's pragmatic philosophy, as shown in the following graph.

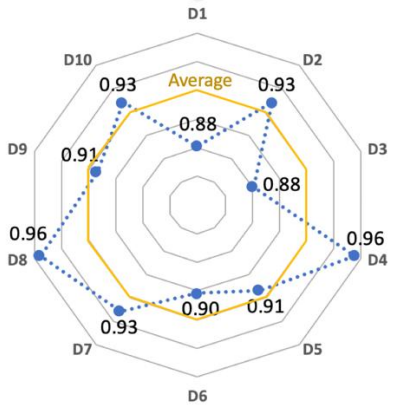

Fig. 1: Respondents' perceptions of Dewey's philosophical indicators in vocational high school

Referring to Figure 1, although many indicators—namely D2, D4, D5, D6, D7, D8, and D9—received positive perception scores from respondents, two indicators, D1 and D3, scored considerably below the average. Researchers found the lowest perception scores in the indicators that constitute the core of Dewey's pragmatist philosophy, specifically the principles of learning by doing (D1) and experience-based skills (D3). These facts suggest that educators of vocational schools have not yet effectively applied Dewey's philosophical values.

Several factors account for this limited implementation. First, inadequate practice facilities and infrastructure continue to be a significant obstacle. Many vocational schools lack sufficient laboratories, workshops, or practice equipment. The available equipment is often outdated, does not meet industry standards, or is available in limited quantities, which prevents optimal use by all students. As a result, students tend to receive more theory than real practice.

Second, limited operational funding significantly constrains implementation. Practical activities require substantial costs for consumable materials, equipment maintenance, and the procurement of updated technologies. Since SMK fund allocations are generally minimal and disproportionate to actual needs, the execution of experience-based learning is frequently hampered.

Third, the readiness of teachers and instructors remains uneven. Not all teachers possess up-to-date competencies aligned with the latest technological advancements in the industry. Moreover, limited opportunities for training or upskilling prevent teachers from effectively applying learning-by-doing methods.

Fourth, linkages with industry remain weak. Collaborations that are supposed to support industrial work practice often remain merely formal, preventing students from gaining work experiences relevant to their field. The lack of industry involvement in curriculum design further contributes to the misalignment between the skills taught in schools and labor market demands.

Fifth, policy and bureaucratic factors also play a role. The vocational curriculum tends to be heavily theory-based, while regulations have not fully supported flexibility for project-based and experiential learning. Consequently, schools remain preoccupied with fulfilling curriculum targets rather than strengthening practical skills.

Overall, limitations in facilities, funding, teacher competencies, industry partnerships, and supportive policies have hindered the optimal implementation of the principles of learning by doing and experience-based skills in Indonesian vocational schools.

Attention to these two indicators is necessary, as many studies have shown that these principles not only help individuals acquire competencies in technical skills but also foster the development of critical professional skills such as problem-solving, teamwork, communication, and other vital skills for the workplace (Morley, 2025; Tanaka et al., 2023). Indicator D3 warrants particular attention because experiential learning, such as internships and hands-on training, enables students to apply theoretical knowledge in real-world contexts, thereby promoting a more profound understanding and skill development. When combined with other methods, such as problem-based learning and experiential learning, vocational education institutions can create an engaging and effective learning environment (Varma & Malik, 2023).

Based on the data obtained, the research subjects' perceptions regarding the implementation of Prosser's philosophy in vocational education are presented in Figure 2.

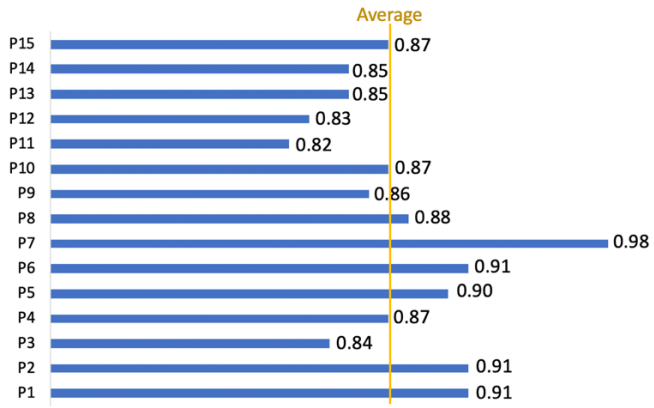

Fig. 2: Respondents' perceptions of Prosser's philosophical indicators in vocational high school

Figure 2 shows that, in general, respondents expressed positive perceptions of all indicators of Prosser's philosophical values in vocational education. However, the perceptions of indicators P3, P9, P11, P12, P13, and P14 scored below the average. The graph also indicates that P3 received the lowest score. This finding suggests that the machines available in schools still lack the same specifications as those used in industry or the workplace. As a result, Prosser's second theorem has not yet been fully implemented in vocational schools.

Nevertheless, schools have attempted to provide alternative solutions, such as establishing teaching factories (see indicator P6) and engaging students in industrial practice (see indicator P7), both of which received perception scores close to the maximum. These efforts can serve as effective strategies for bridging the gap between the school environment and the industry or workplace. The Teaching Factory initiative, also known as the Learning Factory, focuses on acquiring practical knowledge and skills. Students work in conditions that resemble real industrial environments, following the product lifecycle from design to production, thereby gaining in-depth knowledge of engineering workflows (Szabó et al., 2024). The Learning Factory not only provides valuable opportunities for students but also strengthens collaboration between universities and industry. By involving industry partners, the lessons become more aligned with labor market needs, making it easier for students to secure jobs in fields relevant to their qualifications (Jorgensen et al., 1995).

The gap between the machinery used for practical training in schools and the machinery found in the industry may be attributed to the limited operational funding available, as reflected in Indicator P11, which received a score significantly below average and the lowest among all indicators. This study also found that all indicators related to funding, such as school development programs (Indicator P12), infrastructure procurement (Indicator P13), and the recruitment of competent teachers (Indicator P14), showed scores below the average. These conditions suggest that schools continue to face challenges related to the availability of adequate operational funding. In this context, the values of Prosser's 16th theorem have not been fully implemented in vocational education in Indonesia.

Funding gaps in vocational high schools (SMK) in Indonesia are primarily influenced by government policies that have not been fully effective in managing vocational education. These policies have resulted in various disparities, one of which is the inadequacy of the School Operational Assistance (BOS) program. Although BOS funds are intended to cover non-personnel operational costs, in reality, they fail to meet the actual needs of SMKs. Schools often report insufficient funds for laboratory equipment, facility maintenance, expensive technical practice

materials, electricity, and other operational expenditures that far exceed BOS allocations.

Additionally, policymakers often allocate budgets in ways that do not align with actual needs. Compared to general senior high schools, SMKs have more complex demands, including the provision of practice laboratories, technical equipment, consumable materials, and specialized teachers. However, the funds allocated, whether from BOS or local government, are not proportionally adjusted to these needs. As a result, vocational schools continue to experience budget shortages despite the availability of funding.

The funding gap is further exacerbated by delays in the disbursement of funds from both central and local governments. Many schools report that BOS disbursements are frequently delayed, forcing them to postpone operational activities, procurements of consumables, and even practice-based learning. In some cases, teachers or schools resort to using personal funds or temporary reserves to meet urgent needs.

Another contributing factor is weak financial management within schools. A lack of transparency, poor planning, and limited competence in financial administration often prevent the optimal use of available resources. Moreover, limited local resources and low levels of support from local governments worsen the situation, particularly for SMKs located in economically disadvantaged regions.

The rising cost of operations also presents a significant challenge. Inflation and the increasing prices of equipment and practice materials continuously drive up expenditure needs, while budgets remain stagnant. In addition, complex regulations and bureaucratic procedures place further burdens on schools, as lengthy processes for applications, disbursement, and financial accountability delay access to funds that should already be available.

Conclusion

The values of Dewey's philosophy, particularly those reflected in the indicators of learning by doing and experiential learning, have not yet been effectively implemented in Indonesia. Similarly, the values of Prosser's philosophy also remain inadequately applied. Vocational schools continue to face challenges, including limited operational funding and insufficient investment in providing practice equipment comparable to that used in industry.

In response to these findings, several strategic steps are necessary: vocational education must strengthen partnerships with industry and foster more synergistic collaboration with other schools. The government should establish policies that encourage industry to take greater responsibility in supporting the development of vocational education. Furthermore, competency-based curricula

must continue to be developed to create learning environments that are better aligned with industrial conditions.

References

Aleksandrov, A. Y., Zakharova, A. N., & Nikolaev, E. L. (2015). mor. Proceedings of 2015 International Conference on Interactive Collaborative Learning (ICL), 452–454.

Ali, M., Triyono, B., & Koehler, T. (2020). Evaluation of indonesian technical and vocational education in addressing the gap in job skills required by industry. Proceeding - 2020 3rd International Conference on Vocational Education and Electrical Engineering: Strengthening the Framework of Society 5.0 through Innovations in Education, Electrical, Engineering and Informatics Engineering, ICVEE 2020, October 2020. https://doi.org/10.1109/ICVEE50212.2020.9243222

Alojaiman, B. (2023). Technological modernizations in the industry 5.0 era: A descriptive analysis and future research directions. Processes, 11(5). https://doi.org/https://doi.org/10.3390/pr11051318

Bjerregaard, T. (2010). Industry and academia in convergence: Micro-institutional dimensions of R&D collaboration. Technovation, 30(2), 100–108. https://doi.org/https://doi.org/10.1016/j.technovation.2009.11.00

Defalco, A. (2016). Dewey and vocational education: Still timely? The Journal of School & Society, 3(1), 54–64. http://scholar.lib.vt.edu/ejournals/JCTE/v17n1/pdf/

Düzgünçınar, T. (2025). Bridging the gap between industry needs and vocational training curricula. Journal of Information Systems Engineering and Management, 10(44s), 693–707. https://doi.org/10.52783/jisem.v10i44s.8649

Eze, T. I., & Chukwutem Onwusa, S. (2021). An analysis and application of aharles allen prosser's theories for functional and quality technical and vocational education in nigeria. International Journal of Research and Innovation in Social Science, V(Xi), 2454–6186. www.rsisinternational.org

Gilsing, V., Bekkers, R., Bodas-Freitas, I., & Van der Steen, M. (2011). Differences in technology transfer between science-based and development-based industries: Transfer mechanisms and barriers. Technovation, 31(12), 638–647. https://doi.org/https://doi.org/10.1016/j.technovation.2011.06.009

Gyimah, N. (2020). Assessment of technical and vocational education and training (tvet) on the development of the world's economy: perspective of africa, asia and europe. SSRN Electronic

Journal, January. https://doi.org/10.2139/ssrn.3541072

Idiong, S. P. (2023). John dewey's pragmatic education: A veritable tool for nation building in nigeria. International Journal of Education and Evaluation, 9(1), 21–30. https://doi.org/10.56201/ijee.v9.no1.2023.pg21.30

Jawara, M. A., White, D., & Senghor, O. (2019). An insight into entrepreneurship education practices in technical and vocational education and training institutions. Journal of Global Entrepreneurship Research, 9(1). https://doi.org/10.1186/s40497-019-0169-z

Jorgensen, J. E., Lamancusa, J. S., Zayas-Castro, J. L., & Ratner, J. (1995). The Learning Factory Curriculum Integration of Design and Manufacturing. Proceedings of the World Conference on Engineering Education, 15–20.

Kleiner-Schaefer, T., & Schaefer, K. J. (2022). Barriers to university–industry collaboration in an emerging market: Firm-level evidence from Turkey. The Journal of Technology Transfer, 47, 872–905. https://doi.org/https://doi.org/10.1007/s10961-022-09919-z

Luo, G. (2024). The contributions of john dewey ' s philosophy of pragmatism to an understanding of education and its reform. Journal of Education and Educational Research, 10(2), 224–228.

Mack, A. (2015). Experiencing the German Plumbing Education and Training System, & Business and Entrepreneurship. https://doi.org/10.13140/RG.2.2.28661.29921.

Molele, M. B., Khoza, S. D., & Skosana, N. M. (2024). Identifying the gaps in the management of work integrated learning among TVET college national certificate (vocational) students. Jurnal Penelitian Dan Pengkajian Ilmu Pendidikan: E-Saintika, 8(1), 1–16. https://doi.org/10.36312/esaintika.v8i1.1199

Morley, S. (2025). Bridging the skills gap: The transformative power of TVET in today's workforce.

Morris, H. A., & Powell, C. M. (2013). Delivering tvet at the secondary level: A practical approach. Caribbean Curriculum, 21, 1–18. http://www.uwispace.sta.uwi.edu/dspace/bitstream/handle/2139/39009/Delivering TVET at the Secondary Level Morris and Powell.pdf?sequence=1

Muscio, A., & Vallanti, G. (2014). Perceived obstacles to university-industry collaboration: Results from a qualitative survey of Italian academic departments. Industry and Innovation, 21(5), 410–429. https://doi.org/https://doi.org/10.1080/13662716.2014.969935

Preidyte, K. (2025). The enduring legacy of john dewey: A pioneer in educational reform. Hatching Dragons Blog.

Rahman, M. M., Ferdousi, U. S., Hasan, T., Sharmi, T., Shahid, M. A., & Ahmed, F. (2022). Challenges in engineering education: A review. Proceedings of the 5th International Conference on Industrial & Mechanical Engineering and Operations Management, 26–27.

Sadiq, S. (2024). Challenges of tvet sector in pakistan. Https://Www.Linkedin.Com/Pulse/Challenges-Tvet-Sector-Pakistan-Sakhawat-Sadiq-Pqbrf.

Stephens, G. E. (2011). Teacher internships as professional development in career & technical education. Journal of Career and Technical Education, 26(2). https://doi.org/10.21061/jcte.v26i2.526

Synytsia, A. (2020). Education as a means of affirming democracy values in john dewey's pragmatism: Modern perspective. Journal of Education Culture and Society, 11(1), 30–41.

Szabó, D., Csikós, F., Panker, V., & Kovács, I. (2024). Learning Factories in Practice: The Example and Development Proposal of Mini Company Located in the Automotive Science Park Based on International Best Practices. Engineering Proceedings, 79(1), 56. Https://Doi.Org/10.3390/Engproc2024079056.

Tanaka, N., Angel-Urdinola, D., & Rodon, G. (2023). Teachers in technical and vocational education and training are critical for successful workforce development. Education for Global Development.

Varma, C., & Malik, S. (2023). Perspective Chapter: TVET in the 21st Century – A Focus on Innovative Teaching and Competency Indicators. In J.-H. Ye & M. Jiang (Eds.), Technical and Vocational Education and Training (pp. 1–226). IntechOpen Limited. https://doi.org/10.5772/intechopen.112516

Wirtu, D. (2020). Change, continuity and challenges in ethiopian tvet system: A historical sketch. Continuity and Challenges in Ethiopian … Ethiopian Journal of Behavioral Studies, 2020(1), 26–44.

Ye, Y., & Shih, Y. H. (2021). Development of john dewey's educational philosophy and its implications for children's education. Policy Futures in Education, 19(7), 877–890. https://doi.org/10.1177/1478210320987678

Zamal, M. F. Bin, Begum, A., & Rawshan, L. (2017). Industry-academia collaboration: conflicts and strategies to stimulate innovation and employability. Conference: International Summit on Employability and Soft Skills (ISESS 2017).