

Exploring The Contribution of The Four Pillars of Partnership to The Implementation of Work-Based Learning in Vocational Education

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ABSTRACT

This study analyzes the influence of the four pillars of partnership on the success of WBL as well as the differences in perceptions between teachers, students, and industry in Tegal Regency. The method used in this study is quantitative with data analysis using multiple linear regression and one-way ANOVA. The results of the study show that the four pillars are simultaneously influential. Partially, Confidence ($p = 0.002$; Beta = 0.415) and Profit ($p = 0.014$; Beta = 0.310) is significant, while Need ($p = 0.065$) and Strength ($p = 0.254$) are not. ANOVA revealed significant differences in perceptions between groups ($p = 0.008$), with teachers being more optimistic than industry (mean difference = 4.200; $p = 0.012$). The results of the analysis show that the success of WBL is not enough to rely solely on MoUs or facilities, but is highly dependent on industry trust and mutual benefits. Schools need to build the character and safety of students' work and create a clear benefit-sharing scheme.

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INTRODUCTION

Vocational Education in Indonesia is currently facing the biggest challenge in reducing the open unemployment rate of its graduates. The Open Unemployment Rate (TPU) for the young age group (15-24 years) remains high, reaching 17.86%. BPS data also shows an increasing trend of unemployment among graduates, indicating the failure of the system in bridging graduates with the job market (BPS, 2023)(Nuraeni, 2023). Phenomenon *skills mismatch* And the high turnover of young workers in regional industries further emphasizes the diagnosis of this problem, there is a wide competency gap between what graduates have and what the world of work needs (Rari & Dewa, 2025). This creates a gap between the competencies possessed by graduates and what is needed by industry. This job readiness is not only a problem for graduates, but also for industries that struggle to find a competent and ready-made workforce (Ardhana et al., 2025; Pramesthi & Artayani, 2024). A report issued by the Central Statistics Agency (2020), the graduate unemployment rate continues to increase year by year, showing that despite many graduates, not all of them are able to enter the job market smoothly (BPS Indonesia, 2020). This raises questions about the effectiveness of vocational education that should prepare them for the world

of work. On the other hand, industries in Indonesia have difficulty in getting a workforce that has skills according to market needs (Dardiri, n.d.; Kamila et al., 2025; Ngadi, 2024). The reality on the ground shows that many companies complain about the lack of technical skills and soft skills in graduates.

In efforts to overcome this problem, the government massively echoes the revitalization of vocational high schools (Vocational High Schools) through policies *Link and Match* with Industry (Adhis Tessa & M. Alie Humaedi, 2024; Milandah Maulina*, n.d.). The initial indicator of this alignment is often measured by how much *Memorandum of Understanding* (MoU) that has been signed by the school and industry. However, the signing of MoU is often stuck to be limited to administrative formalities to meet the demands of school accreditation (Yahya & Mahande, 2023). The facts on the ground show that there is a gap between the expectations of vocational education and industrial religious. The industry often complains about the lack of basic competencies of vocational school graduates. This indicates that the partnership has not been substantially underway (Fatihaturrizqi et al., 2025; Riki Satia Muharam et al., 2025; Riska Angriani et al., 2025). Level *Work readiness* students are still at a moderate level and have not fully met industry expectations (Agustian et al., 2024). Efforts to improve *Work readiness* vocational school graduates can be carried out, one of which is the implementation of learning *Work Based Learning* (Mardani et al., 2023; Pratama & Sudarsono, 2024). Tegal Regency, which is widely known as the center of the metal and machining industry in Indonesia, has a potential ecosystem for the implementation of vocational education, especially in the field of machining competencies. It is very *Match* in support of learning *work-based learning*. However, in its implementation, a strong partnership commitment between vocational schools and industry is needed, because without a strong partnership commitment learning *Work-based learning* It cannot run properly. Based on these problems, it is necessary to conduct an in-depth exploration of the quality of strong partnership relationships supported by four main partnership variables, namely: 1) Needs; 2) Trust; 3) Strength ; and 4) Profit on the implementation of learning *Work-based learning*.

This study not only aims to examine the contribution of the four pillars of partnership to the success of *work-based learning* but also to evaluate the phenomenon of partnerships descriptively, as well as dissect the perception between schools and industry.

LITERATURE REVIEW

Vocational Education Partnership: Strategic Synergy between Vocational Schools and Industry

In the vocational education ecosystem, partnership relationships between Vocational High Schools (VHS) and the Business and Industrial World is the main foundation to produce competent graduates. This partnership is not just the fulfillment of administrative requirements, but a strategic collaboration designed to bridge the gap between the school curriculum and the real demands in the workplace. Based on the evaluation review of the school-company cooperative relationship, the success of a vocational education partnership is conceptually determined by four relational dimensions (Ahsanul Fakhri & Munadi, 2019).

1. Needs

A solid partnership departs from the realization that both parties need each other. The vocational school needs the industry as a real laboratory for students to apply theory and hone skills (*hard skills and soft skills*). On the other hand, the industry needs schools as suppliers of ready-to-use skilled workforce, so as to reduce training costs and time (*Training*) for new hires (Fitri & Wahyudi, 2025).

2. Trust

Trust is the key currency in institutional collaboration. The industry must have confidence in the quality of education and character of vocational school students placed in their companies. On the other hand, the school also puts full trust in instructors or supervisors in the industry to educate, direct, and evaluate student performance objectively and professionally while in the work environment (Tahir, 2020).

3. Strength

Each institution brings its own "strengths" or capacities. Schools have strengths in the provision of human resources (students) and the basis of academic theory, while the industry has strengths in the form of professional standard facilities, cutting-edge technology, and a disciplined industrial work culture. A good partnership will bring these two forces together to create a work-based learning system (*Work-based learning*) comprehensive (Fatmawati, 2011).

4. Profit

Cooperative relations must be symbiotic of mutualism. The benefits for students and schools are increased competence, changes in attitudes/behaviors to be more professional, and gain relevant work experience. Meanwhile, the advantage for the company is to get operational personnel assistance, as well as the opportunity to recruit the best graduates who already understand the company's work rhythm (Nurjannah, 2023).

Manifestation of Partnership through *Work Based Learning*

The four pillars of partnership above are manifested in real life through *Work-based learning*. To make *Partnership Vocational Education* has a maximum impact, its implementation must be evaluated through three crucial stages based on the program evaluation model (Ahsanul Fakhri & Munadi, 2019). The first stage of careful planning includes aligning the competencies that will be taught in the industry with the school curriculum, as well as determining the ideal duration of time so that students get meaningful experiences. The second stage is a harmonious implementation where a good relationship is created between students and employees/industry supervisors. Students are trained to be independent in solving problems in the workplace, with consistent guidance and direction from the industry.

The third stage is the evaluation of measurable results. The final assessment should represent an improvement in the student's real competence. Grades and certificates or certificates given by

industry supervisors are valid proof that the student has adapted and met the applicable work standards in the company. Through this structured and regularly evaluated partnership, vocational education can truly carry out its function as a relevant, adaptive, and highly competitive workforce provider in the industrial world (Kasanah et al., 2025; Ngatmini et al., 2025).

METHOD

This study uses a quantitative approach. This design was chosen to measure the effectiveness of the implementation of partnerships numerically, test the hypothesis of the relationship between variables, and explore empirical obstacles in the field in depth. The research was carried out on the vocational education ecosystem in the Tegal Regency area. The sample was determined using *purposive sampling techniques* with certain inclusion criteria. The research sample consisted of the main subject groups: (1) Grade XII students from 3 vocational schools with Machining Engineering expertise competencies who have completed Prakerin; (2) Productive Teachers with Mechanical Engineering expertise competencies and (3) Industrial Practitioners or industrial partners from vocational schools totaling 20 industry partners who are active as school partners for two consecutive years.

Primary data collection was carried out through a closed-ended questionnaire on the Likert scale (score 1-4) which described four independent variables (needs, trust, strengths, and profits) and dependent variables (success of *work-based learning*). The instrument has gone through the content validity test (*expert judgment*) and the construct validity test (*Pearson Product Moment*). The reliability of the instrument was tested using *Cronbach's Alpha*, resulting in a coefficient of > 0.70 indicating high reliability. Secondary data collection was carried out through semi-structured interview guidelines to the industry.

Data analysis was carried out in two stages. First, Descriptive Analysis, which calculates the average score (*mean*) to categorize the quality of the partnership (Excellent, Good, Adequate, Less) based on the reference of norms. Second, Inferential Analysis with the help of SPSS software. Before the hypothesis test, a prerequisite test was carried out in the form of a normality test (*Kolmogorov-Smirnov*) and a linearity test. Hypothesis testing used Multiple Linear Regression to determine the influence of the four pillars of partnership on the effectiveness of Prakerin. In addition, the ANOVA One-Way Test was used to analyze whether there was a significant difference in perception between the Teacher, Student, and Industry groups. Interview data were analyzed thematically for triangulation and deepening of quantitative findings.

RESULTS AND DISCUSSION

Data Normality Test

The data from the research was carried out to test the normality of the data using the *One-Sample Kolmogorov-Smirnov*. Test results show value *Asym. Sig (2-Tailed)* on the Needs variable (*Needs*) by 0.117, variable *Needs* by 0.117, variable *Trust* by 0.214, variable *Power* of 0.60 and the Learning

variable *Work Based Learning* by 0.77. In Table 1, the data shows that all variables are normally distributed.

Table 1. Data Normality Test

Variables	Asym. Sig (2-Tailed)	Condition	Conclusion
(X1)	0.117	0.117 > 0.05	Normal
(X2)	0.214	0.214 > 0.05	Normal
(X3)	0.60	0.60 > 0.05	Normal
(X4)	0.68	0.68 > 0.05	Normal
(Y)	0.77	0.77 > 0.05	Normal

Data Validity Test

Instrument testing was carried out using a validity test *Pearson Product Moment*. Based on the results of the analysis, all instrument items in the Need variable (X1) showed a significance value of < 0.05 and a value of *Pearson Correlation* (r count) which is greater than the r table. For example, item X1.1 has a calculated r-value of 0.824 (Sig. 0.012 < 0.05). Thus, all items of the instrument statement are declared valid and suitable for use for the next stage of analysis.

Table 2. Data Validity Test

		X1.1	X1.2	X1.3	TOTAL X1
X1.1	Pearson Correlation	1	.645	.712	.824*
	Sig. (2-tailed)		.123	.081	.012
X1.2	Pearson Correlation	.645	1	.534	.791*
	Sig. (2-tailed)	.123		.112	.023
X1.3	Pearson Correlation	.712	.534	1	.865*
	Sig. (2-tailed)	.081	.112		.008

Regression Test

Based on the results of the Multiple Linear Regression test in table 3, an R Square value of 0.664 was obtained. This shows that the variables of Need, Trust, Strength, and Profit together contribute an influence of 66.4% to the success of implementation *Work Based Learning*. The remaining 33.6% was influenced by other factors not studied in this study.

Table 3. Regression Test

Models	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.815a	.664	.640	1.254

The results of the F test in table 4 show a significance value of $0.001 < 0.05$. Thus, it can be concluded that the four pillars of partnership (Needs, Trust, Strengths, and Profits) simultaneously have a significant effect on the success of the implementation of *Work Based Learning*. Based on the partial testing (t-test) in table 4, it was found that the Trust variable had a Sig. value of $0.002 < 0.05$ and the Profit variable had a Sig. value of $0.014 < 0.05$. Both have proven to have a significant effect. Furthermore, judging from the *Standardized Beta* value, the Confidence variable is the most dominant predictor (Beta = 0.415). This indicates that the higher the level of industry trust in student competencies, the better the quality and success of *Work Based Learning*.

Table 4. Coefficient Partial Test

Models	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	2.140	1.150		1.860	.071
Requirements (X1)	.210	.110	.185	1.909	.065
Trust(X2)	.530	.140	.415	3.785	.002
Power (X3)	.150	.130	.120	1.153	.254
Profit (X4)	.380	.125	.310	3.040	.014

The results of the One-Way ANOVA test in table 5 produced a significance value of $0.008 < 0.05$. This means that there is a significant difference in perception between students, teachers, and industry groups in assessing the effectiveness of school-industry partnerships.

Table 5. One-Way ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	85.450	2	42.725	6.850	.008
Within Groups	120.300	27	4.455		

The data was then tested by *Post-Hoc Tukey HSD* to find out the location of specific differences in perception. The test results in Table 6 show that the most significant difference in perception occurred between the Teacher and Industry groups (Sig. = $0.012 < 0.05$). A *positive mean difference* of 4,200 in the Teachers group towards Industry indicates that Teachers tend to give a much higher (more optimistic) assessment compared to the realistic assessment of the Industry. Meanwhile, no significant difference was found between the views of the teacher and the student.

Table 6. Post-Hoc Test Tukey HSD

Groups	Mean Difference	Std. Error	Sig.
Teacher	Students	1.500	.850 .230
	Industry	4.200*	1.100 .012
Industry	Students	-2.700	1.050 .058
	Teacher	-4.200*	1.100 .012

The results of the Multiple Linear Regression test confirm that the four pillars of the partnership of Need, Trust, Strength, and Profit make a very significant contribution to the success of WBL. The results of the data testing confirm that this four-pillar conceptual framework is a solid foundation. This means that the success of students in absorbing skills in the industry does not only depend on the pedagogic quality of the school curriculum, but is highly determined by how healthy the quality of the institutional relationship between the school and the machining industry is. These findings empirically reinforce the idea that the integration of a complete relational dimension is a key precondition for the effectiveness of learning in the workplace, beyond just the availability of physical facilities in industry (Burhanuddin et al., 2024; Hunt, 2025).

The most interesting finding was seen in the partial test where of the four pillars, only the Trust and Profit variables showed a partially significant influence. The Trust variable is even the most dominant predictor. This indicates that in the field, the metal industry in Tegal Regency is willing to provide full learning access such as operating a lathe/CNC and holding real projects only if they strongly

believe in the work attitude, discipline, and basic occupational safety (OHS) of vocational school students. The dominance of this Trust variable is in line with findings that confirm that the granting of real responsibility to students on the production floor is highly dependent on risk mitigation by the industry (Nurdiana et al., 2026). If there is no trust, students are usually given jobs that are not relevant to the achievement of WBL competencies.

In addition, the Advantage element *Profit/Benefits* is also crucial. These findings are in line with the results of research showing that the active participation of industry in vocational education is fundamentally driven by motives *Benefit* (Altje et al., 2026; Riki Satia Muharam et al., 2025). The industry will actively mentor students if they feel the immediate benefits, whether in the form of time efficiency in the recruitment of new employees in the future or completion assistance *Job Order* production. On the contrary, the Necessity *Needs* and *Power* is partially insignificant because it is merely the entrance to the administrative MoU, but trust and mutual benefit that are the driving force for the quality of daily operational learning.

The analysis of the One-Way ANOVA and Post-Hoc Tukey tests dissected the root of the problems that often hamper the program *Link and Match*. It was found that there was a significant difference in perception between teachers and the industry. Teachers tend to give much higher and more optimistic assessments than industry assessments. The findings of this gap confirm the existence of a phenomenon *illusion of alignment* on vocational education in Indonesia (Muhammad Guntur Setyawan et al., 2024). Teachers feel that the process of debriefing and student competence is relevant, but the industry as a *End-user* Uses much stricter real performance evaluation standards (Setiyana et al., 2024). The fact that the industry gives a lower score proves that the reality of the technical competence and work-ready character of graduates still mismatch the actual operational standards of the company.

CONCLUSION

Based on the findings of the research, it can be concluded that the success of the implementation of WBL at the Mechanical Engineering Vocational School in Tegal Regency is not determined by all pillars of partnership equally. The two most dominant and partially significant factors are Trust and Profit. This means that the higher the industry's trust in the competence and character of students, and the more tangible the benefits that the industry obtains from its involvement, the higher the quality of the WBL implementation. Meanwhile, the Need and Strength aspect is only effective in a simultaneous framework, but not significantly individually.

In addition, a significant perception gap was found between teachers and industry. Teachers tend to be more optimistic in assessing the effectiveness of partnerships compared to more realistic and critical industry assessments. This indicates that there is an *illusion of alignment* that needs to be straightened out so that the *Link and Match* program does not stop at administrative formalities. In practical terms, improving the quality of WBL requires a strategy that focuses on building industry trust as well as the creation of measurable reciprocal benefit schemes. Periodic joint evaluations between

schools and industry are the key to aligning perceptions and eliminating over-optimism that is not in accordance with the needs of the world of work.

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