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Leadership in fostering vocational school partnerships in the time of COVID-19

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Abstract--This paper sought to explore school leadership practices, the management of school partnerships with the industry, and the challenges faced in implementing partnerships during the COVID-19 pandemic. Embracing an exploratory research design including a sequential model, the present research involved 89 principals, vice principals, and productive teachers from government-funded secondary schools who directly engage in the management of school partnerships with the industry. Findings reveal that school leadership practices implemented a participatory approach. School management was employed to optimize the role of vice principals, program heads, and productive teachers. The challenge of establishing partnerships during the COVID-19 pandemic lies in implementing an independent learning policy assisted by information and communication technology.

Keywords--business world, coronavirus disease pandemic, industry, partnership management, school leadership, school partnerships.

Introduction

School leadership during a pandemic is challenging because it is forced to adopt new practices different from the pre-pandemic era (Adams et al., 2021; Harris & Jones, 2020). Leading a school during the COVID-19 pandemic is not an easy matter because it is related to the unprecedented cross-border crisis experienced by all countries (Petridou & Zahariadis, 2021). Countless difficulties in school leadership practices and management have surfaced during the pandemic, one of which is establishing partnerships with the industry. Schools and industries have been subject to a physical distancing policy that requires them to always maintain distance and not have direct and intense contact with the community. Consequently, it is particularly difficult for vocational high schools to maintain partnerships with the industry. This partnership is mandatory in implementing the vocational high school curriculum to ensure that students embody competencies according to the demands of the career world. Therefore, schools must find efficacious ways during the covid 19 pandemic to carry out school partnerships with the industry.

In the Indonesian context, around 67 million students study online from home, including vocational high school students (Ministry of Education and Culture, 2020). Learning from home with direct control from school remains a challenge,

let alone working online involving partners from outside the school. However, school leaders cannot stay idle and hope that the pandemic ends by itself. Principals must find effective, efficient, and productive ways during the covid pandemic (Reyes-Guerra et al., 2021). Partnerships with the industry are at the heart of vocational education under the curriculum to attain student competency (Widodo et al., 2020). Principals must work online from home to ascertain that the partnership initiatives are underway by communicating, cooperating, coordinating, and collaborating with students, parents and support groups, and assisting online teachers (Harris & Jones, 2020).

The partnership between vocational high schools and the industry is the crucial key to the success of vocational education, where the implementation process is designed, carried out, and jointly evaluated so that the suitability of its graduates' competencies to the demands of the industry and the career world increases (Jumarni et al., 2019). Partnerships have a strategic role in producing graduates who can compete in global competition and are also productive (Hadromi, 2018). It is caused by the characteristics of vocational schools that prioritize work-based learning approaches (Nuri et al., 2019). The partnership provides important benefits for schools, one of which bolsters vocational education in carrying out a practice-oriented learning process in line with the industry's demands. It entails the desired match between what is learned in school and what the industry expects, realized through a joint curriculum design. However, during the COVID-19 pandemic, school principals must find effective and different ways to implement partnerships with the industry while prioritizing the safety of their students' lives from the imminent threat of COVID-19 so that their students will not experience learning loss.

The role of school principals is undeniably important, especially regarding the school's independence in making decisions and implementing partnerships during the COVID-19 pandemic. Principals must act quickly with foresight, make careful decisions, consider options and consequences, communicate empathetically and humanely, and move forward to represent the credibility of the school community (Adams et al., 2021). Leading schools during the pandemic requires immense effort and commitment because it takes up a very different way of practicing leadership (Bush, 2020). The principal shoulders the duty as a leader and a manager who is required to have excellent knowledge and understanding of the focal points of crisis management because it is closely related to the safety of the students' and teachers' lives.

This article explores school principals' leadership in implementing school partnerships with the industry and the career world in times of the COVID-19 pandemic. This study addressed two research questions: (1) How does school principals' leadership materialize in implementing school partnerships with the industry and the career world during the Covid-19 pandemic? (2) What aspects of leadership are dominantly used in implementing the school partnership? The answers to these research questions are quintessential for developing leadership knowledge in schools, its relationship with community partnerships, and overcoming crucial problems in the practice of school-community partnerships.

Literature review

Leadership during the covid pandemic

The COVID-19 pandemic has wreaked havoc on the structure of education (Hargreaves & Fullan, 2020). If this is allowed to drag on, it can jeopardize children's learning process. Meanwhile, everyone knows that learning is a powerful tool for life (Mazurkiewicz, 2021). Schools are closed, and children study at home remotely controlled by the principal and teachers. The principal controls learning synchronously or asynchronously. They are demanded to act quickly and to provide effective solutions by prioritizing the welfare of leaders, teachers, students, families, and all other stakeholders involved in restarting school activities (Harris & Jones, 2020). In providing leadership services at the time of the COVID-19 era, school principals must quickly adapt to new concepts and competencies of leadership (Reyes-Guerra et al., 2021). Six competencies must be cultivated during the COVID-19 era in providing good service, namely: caring, teamwork, work on fostering trust, creative leadership and learning using digital platforms, resilience, and a learning community/country (Harris & Jones, 2020). Leadership at times of crisis needs to foster competencies as communicators that are more personalized, practical, and pragmatic, to lead with high flexibility, creativity, and care, bend the rules and shift priorities, and resist under stress (Reyes-Guerra et al., 2021).

The dimensions of intuition, resilience, creativity, agility, authenticity, self-control, and foresight are competencies the leaders need in this time of crisis (O'Brien & Robertson, 2009). In times of crisis, the role of the leader is prominent to provide motivation, inspiration, and influence of resilience in facing the crisis. A leader in times of crisis is strongly advised to refrain from traits and actions that make his followers feel hopeless. The leader must not show hopelessness, boredom, and cynicism (Mazurkiewicz, 2021). Instead, the leader must become a true transformer by changing his/her leadership style from a conventional style to a collaborative style, supporting cooperation, participation, and creativity (Gobillot, 2010). Leaders in times of crisis are educational leaders who are responsive, focused on learning and development, contextual and reflective, distributive, and participatory, and shared leadership (Mazurkiewicz, 2021).

In practice, leaders in times of crisis are the ones who no longer focus on their personal aspects but on how to build togetherness to make a quick decision about the appropriate form of learning services for students. However, school leaders should not only focus on making quick decisions due to emergencies, but they should also carefully consider the choices, consequences, and side effects of the actions taken (Netolicky, 2020). Fast, open, and active communication is imperative between leaders, teachers, parents, and the community in establishing education in crisis times. Leaders should communicate the goals, programs, and agendas and, at the same time, empathically prioritize safety and humanity (Adams et al., 2021).

Partnership management

The partnership of vocational schools with the industry as the implementation of learning can boost educational activities in shaping student competencies to be more effective and efficient so that the partnership's goals can be achieved (Hadromi, 2018). The effective and efficient partnership facilitates the improvement of learning quality, student success quality, the compatibility and relevance of the curriculum with the career world, and the increased recruitment of the graduates in the career world (Ubaidah et al., 2021). The synergy built between vocational schools and the industry is of paramount importance, especially in adapting to the progress and development of the industry to create a collaborative environment in producing skillful graduates. A partnership is one of the dynamic organizational skills to acquire shared knowledge (Madani et al., 2019). Schools and the industry carry out the acquisition of shared knowledge built on partnership relationships to have a mutual understanding of the skills required by the industry (Netolicky, 2020).

In practice, partnerships manifest on different levels, starting from coordination and cooperation to the level of collaboration, which are the core of an inter-organizational activity. Collaboration is the most recommended type of partnership in the vocational high school context. In collaboration, it is important to have mutual trust in establishing work relationships, engaging in shared thinking, joint planning, and joint creation of a management system within an integrated and innovative instruction (Tikkinen & Korkeamäki, 2021). The partnership process is built on mutual trust, integrity, a desire to improve quality, and mutually beneficial relationships (Casto, 2016). An established trust is an important factor in the partnership process (Hrelja et al., 2016). To maintain trust, partnerships must be performed in a clear and transparent environment and good communication in interactions, especially in making certain decisions. It implies that a partnership program built between schools and industry must be based on mutual needs by considering the fulfillment of community expectations (Sueptaetrakun & Tangthong, 2018). Trust in this partnership prioritizes communication to be built together sustainably and intensely (Sueptaetrakun & Tangthong, 2018). Openness or transparency in partnership is a must because the parties involved may have different opinions, perceptions, and desires (Jarmai & Vogel-Pöschl, 2020).

In implementing the partnership, several prerequisites need to occur, namely joint regulations, the structure established in regulating joint activities, and the decisions taken and implemented (Pettersson & Hrelja, 2020). In addition, a partnership requires a strong commitment to achieving the goal. The goals in the partnership should be clear and appealing and serve to set its direction. Goal-oriented partnership collaboration is enumerated in a framework starting from Strand 1, namely building shared understanding, followed by Strand 2, collectively contributing, and the last strand, namely regulating (Scoular, Duckworth, Heard, & Ramalingam, 2020). In partnership, it is necessary to build a common understanding through communication, gathering information together, and discussing each role and responsibility. Being able to contribute together can be accomplished through participation, accepting each other's contributions, and being involved in roles and responsibilities. Meanwhile, setting

regulations can be done by considering the contributions made, respecting differences, maintaining a common understanding, and making the adjustment (Scoular, Duckworth, Heard, & Ramalingam, 2020).

Method

This study employed a sequential exploratory research design starting with qualitative data collection and quantitative data collection. A comprehensive picture of the object of this research was first obtained to construct the hypotheses. In the second stage, quantitative data collection explained a variable relationship found in qualitative research.

Research subject

The subjects of this study were principals, vice-principals, and productive teachers at vocational schools in Bogor City. The schools chosen as the research locus are deemed to have successfully implemented partnerships, as listed in table 1.

Table 1
Descriptions of the participants

No	School Name	Qualitative Data Source					Quantitative Data Source
		Principals and Vice Principals	Heads of Program	Productive Teachers	Parents	Industry	Productive Teachers
1	SMKN* 1	4	1	4	4	4	26
2	SMKN 2	4	1	4	4	4	34
3	SMKN 3	4	1	4	4	4	28
4	SMKN 4	4	1	4	4	4	26
	Jumlah	16	4	16	16	16	114

*State-funded vocational high school

Data Collection

Qualitative data were collected to trace the leadership and management of partnerships during the COVID-19 period with details set out in table 2.

Table 2
Qualitative Data Collection

No	Purpose	Interview	Documentation	Observation	FGD
1	Seeking data related to the leadership of the principals in conducting	<ul style="list-style-type: none"> Tools: Interview guidelines Substance: all information related to the 	<ul style="list-style-type: none"> Relevant and related supporting data and information focused on the 	<ul style="list-style-type: none"> Tools: Observation guidelines and photos. How it 	<ul style="list-style-type: none"> Tools: FGD guidelines. Findings of each goal are

	partnerships during the covid pandemic	<p>leadership of the principals in conducting partnerships during the covid pandemic</p> <ul style="list-style-type: none"> • Informants: principals, vice principals, teachers, and other related informants. • Selection of informants: purposive and Snowball 	principals' leadership in conducting partnerships in during the covid pandemic	<p>works: record and photograph activities, events, and other physical evidence.</p> <ul style="list-style-type: none"> • Substance: other information relevant to the principals' leadership in conducting partnership 	validated through various informants
2	Seeking data on the dominant aspects of leadership in conducting partnerships during the covid pandemic	<ul style="list-style-type: none"> • Tools: Interview guidelines • Substance: All information related to the dominant aspects of leadership in conducting partnership. • Informants: principals, vice principals, teachers, and other related informants • Selection of informants: purposive and Snowball 	• Relevant and related supporting data and information focused on partnership	<ul style="list-style-type: none"> • Tools: Observation guidelines and photos. • How it works: record and photograph activities, events, and other physical evidence. • Substance: other information relevant to the partnership 	<ul style="list-style-type: none"> • Tools: FGD guidelines • Findings of each goal are validated through various informants

Meanwhile, quantitative data were collected using a questionnaire given to 114 respondents. The questionnaire consisted of questions that covered the six

dimensions of leadership, namely bravery, collaboration, role model, creativity, trust, and engagement.

Data Analysis

Qualitative data analysis was undertaken on two main open-ended questions given to all the participants: principals, vice-principals, heads of study programs, productive teachers, parents, and 16 industries. Data obtained from open-ended questions were analyzed by using a six-step thematic analysis approach (Nowell et al., 2017), namely: 1) reading the transcript to ensure familiarity with the data set; 2) identifying a list of different codes from field notes across the data set by manually reviewing memos; 3) sorting and compiling all relevant codes into theme data; 4) reviewing the data to detect any new code that appears; 4) reviewing each theme for its coded data extract to identify a coherent pattern; 5) defining the scope and content of each theme, and 6) conducting the final analysis and concluding the findings. For quantitative data analysis, calculations were carried out using the 23 IBM SPSS Statistics program to obtain classical assumption testing, regression analysis, and double regression analysis.

Results

Principals' Leadership in Conducting Partnership with Industry and the Career World during the Covid Pandemic

The principals' leadership in managing partnership takes the following operational steps: 1) determining the goals or objectives of the partnership, 2) analyzing the condition of the school, 3) developing plans, 4) synchronizing curriculum, 5) compiling a joint partnership program, 6) managing human resources for partnership, 7) building partnerships with industry and career world (based on participation, coordination, and collaboration, 8) building communication with partners, 9) building mutual commitments, 10) Practicing through industry classes, industrial field practices/apprenticeships, internships or teacher practices, guest teachers, special job fairs, and teaching factories.

Leadership Aspects

The effectiveness of the principals' operational steps in establishing partnerships with the business world and the industry is accelerated by the leadership abilities that emphasize bravery, collaboration, role model, creativity, trust, and engagement. Figure 1 shows the pattern of variable relationships that influence the establishment of partnerships with industry and the career world.

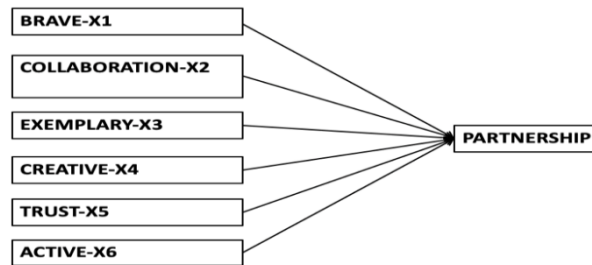


Figure 1. Variable Relationship Patterns That Affect the Establishing of Partnerships

Based on the multicollinearity and heterogeneity tests, it can be said that this model is free from multicollinearity and heterogeneity assumptions. A double regression analysis is necessary to examine the relationship between independent and dependent variables. There is one dependent variable (partnership) and six independent variables in this study. Therefore, this study used double regression. The line equation of the double regression is based on table 3.

Table 3
The Result of Double Regression Analysis

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.889	1.686		-1.121	.266
	X1	.092	.039	.181	2.344	.022
	X2	.101	.042	.192	2.420	.018
	X3	.091	.045	.149	2.010	.048
	X4	.353	.118	.231	2.982	.004
	X5	.102	.037	.210	2.744	.007
	X6	.238	.049	.378	4.871	.000

a. Dependent Variable: Y

Based on table 3, the obtained regression equation is as follows.
 $Y = -1.889 + 0.092X_1 + 0.101X_2 + 0.091X_3 + 0.353X_4 + 0.102X_5 + 0.238X_6 + e$
 Based on the test with the F test count with an error level of 0.05, a sig value (significance) is 0.000 where the sig value is smaller than the error level (0.000 < 0.05). Thus, it can be concluded that Ho is rejected, and Ha is accepted. These results demonstrate a positive influence between bravery, collaboration, role model, creativity, trust, and engagement on the partnership. This positive effect can be seen from the results of the hypothesis testing of 0.980. To demonstrate how high all independent variables affect the dependent variable, it is necessary to do a simultaneous coefficient of determination (R). Table 4 shows the results of the coefficient of determination test.

Table 4
Determination Coefficient Test Results

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,756 ^a	,572	,540	,990
a. Predictors: (Constant), X6, X4, X3, X1, X5, X2				
b. Dependent Variable: Y				

Table 4 shows the value of Adjusted R², i.e., 0.540 (54%). It can be said that bravery, collaboration, role model, creativity, trust, and engagement influence the development of partnership by 54%, and the remaining 46% is attributed to other variables outside the regression model.

Discussion

Principals' Leadership in School Partnership

The partnership between schools, the industry, and the career world is a social element that supports educational activities in which all parties work hand in hand to achieve goals (Putnam et al., 1993). Muladi et al. (2018) stated that school-industry partnership refers to the relationship between learning activities in a school environment and industrial activities to foster student competencies. In building partnerships, schools establish a relationship with various parties to build a social network that helps achieve an organizational goal (Florini & Pauli, 2018). Establishing, maintaining, and developing partnerships requires norms and trust upheld for the benefit of all (Casady et al., 2020). The established relationship facilitates schools and the industry to collaborate and enables the schools to meet the needs of work skills required by the industry (Russo-Spena & Cristina, 2020). Schools and industry can build a mutually beneficial partnership to achieve common goals, including improving students' skills to meet company demands and improving school performance (Hadromi et al., 2015). It can thus be concluded that the partnership between the industry and the business world with schools is a continuous and undivided effort to achieve common goals by sharing responsibilities and authorities.

A partnership can increase the capability of schools in responding to the demand for better graduates (manpower) (Sueptaetrakun & Tangthong, 2018). To deal with the ever-changing and increasingly complex industrial environment, school reformation needs to involve industry as a party that also determines the success of the achievement of vocational education goals (Florini & Pauli, 2018). Partnerships between schools and industry are expected to meet the challenge of providing students with the skills required by industry (Hadromi, 2018) and improve graduates' quality. A sustainable relationship between the school and the industry will allow students to experience a good learning process (Muladi et al., 2018). The main purpose of partnerships is to elevate performance, build good relationships, brainstorm, exchange ideas and information, and implement practice-based or industry-based collective learning (Sancha et al., 2016). School partnerships with the industry make it easier for schools to secure data and

information related to the industry as material for designing school programs (Sanno et al., 2019).

Leadership Aspects for School Partnership

As evidenced in the quantitative findings above, such leadership aspects as bravery, collaboration, role model, creativity, trust, and engagement were found to be positively correlated with school partnership.

Trust, in establishing a partnership, the principals' courage in taking risks and never giving up is necessary. Principals should have strong determination, desire, and the ability to see things that fit to support their role as leaders. With courage, the principal is willing to be steadfast, consistent, and responsible in facing change challenges and can make wise decisions. Being courageous in taking actions during the COVID-19 pandemic is closely related to resilience and emotional regulation, which has a significant effect on work-life balance (Mulyani et al., 2021).

Collaboration, as a manager, the principal can manage schools to find and develop opportunities for collaboration with the business world and the industry. Teachers can develop competencies and skills in line with the competencies required by the business world and the industry. In this case, principals and teachers must be ready to recognize the aspects of change with an adaptive and open mindset and enhance knowledge and skills. Hopefully, the ability to manage the changes will create better and more adaptive schools to changes in the business world (Sunaengsih et al., 2020). The increased competitiveness and changes in the business world and the industry force school principals to be more reliable in conducting various school programs.

Leadership is a dialogue, not a monologue. The principals need to work together with other parties, not working alone. Collaborative principals can create partnerships with various parties/stakeholders that will support the achievement of school programs. Effective collaboration between schools and the business world and industry will facilitate understanding in achieving the school's vision (Muladi et al., 2018). Collaboration is a manifestation of the interactions between several involved parties who have relationships in finding solutions to a problem (Florini & Pauli, 2018). The parties involved in the collaboration have the same goals, after which together they formulate a plan, implement it through activities, and conduct supervision and follow-up in ascertaining that the goals can be achieved (Casady et al., 2020).

Role model, a role model is fundamental for the success of school activities because the teachers and staff will then follow the example of the principals (Sujudi et al., 2020). This behavior can be shown in the form of mutual respect, discipline, friendliness, and steadfastness.

Creativity, principals are to be active and creative in fostering partnership with the business world and the industry so that vocational schools can produce graduates who are skilled in their area of expertise and meet the needs of various sectors of the business world and the industry (Ana et al., 2019). The challenges

faced by school principals will be increasingly dynamic and complex in responding to industry challenges. Therefore, creativity and innovativeness are a must in school management. Creativity, in this case, signifies that the principal must be ready to seize opportunities to improve schools' quality. The principal must create a new work program through formulated breakthroughs, making the impossible possible. Creativity allows the principals to discover an array of new ideas or plans beneficial to the school community. Creative principals will strive for school quality, a continuous effort to improve the quality of students (Mulyani et al., 2020).

Trust, principals are required to maintain the trust given by members, the business world, and the industry by giving trust back in the form of a process of empowerment, development, and high commitment. Trust is necessitated to create partnerships between schools, the business world, and the industry. It is the foundation for collaboration (Mulyani et al., 2021) and an important element in the success or failure of a partnership. Mutual trust will increase partnerships, information sharing, and the designing of joint programs, which can be achieved through two-way communication built based on good intentions, openness, and honesty.

Engagement, To establish well-maintained and developed partnerships, the principal must play the role of an agent of change in encouraging reformation in vocational high schools because the needs of the industry will always be attuned with the trends. Vocational high schools cannot avoid the ever-changing situations in the business world and the industry. Schools must attempt to nurture students to hone their uniqueness and to have their passions, characters, potentials, and equal opportunities to find ways to actualize and develop themselves (Owen, 2015).

The partnerships established between schools, the business world, and the industry aim to coordinate activities to work together. Principals are required to embody aspects that support their leadership, namely 1) the ability to understand oneself as an agent of change, 2) being brave and firm, 3) having full confidence in assigning tasks to members, 4) having a role in determining direction based on values and focus on results, 5) having consistency in leading, 6) having skills in dealing with the complexity of the problems at hand, and 7) focusing on the future. Therefore, school principals are propelled to manage schools to produce competitive graduates (Ana et al., 2019).

In addition, in managing partnerships with the business world and the industry as a source of student learning, the principals should embrace entrepreneurial skills. Entrepreneurship is not exclusive to entrepreneurs. It is a trait the principals should also possess to help them think creatively and act skillfully and to desire positive changes and added value for the improvement of vocational high school capabilities. Entrepreneurial attitude does not exclusively belong to professionals in the economic field, but it is also a necessity in all aspects of life, including in school management (Sunaengsih et al., 2020). The principals should have an intelligent factor in the sense that they must understand clearly and correctly the needs, desires, and demands of the business world and the industry expected of the school. Therefore, they will be able to understand and address

various existing problems and be competent in dealing with these problems effectively, precisely, and full of confidence (Mulyani et al., 2020). The principals' ability to understand the existing situations and opportunities will lead to effective school quality improvement (Sunaengsih et al., 2020).

A revolutionary mindset that embraces change should support the principals' role as an agent of change. This aspect is critical because change is escalating. Schools need leaders who are adaptive to the ever-changing business world and the industry. Principals must also be able to analyze various developments in the industry, estimate their implications for schools, create a sense of urgency, and empower it in school organizations. The leadership of visionary school principals is needed in facing all the challenges to building school effectiveness (Mulyani et al., 2020).

Conclusion

The sole focus of the partnership between schools and the business world and industry rests on the students' competencies and skills. The principals must collaborate with various parties in the industry through programs that are jointly prepared based on a shared vision, mission, and goals, namely the implementation of teaching factories and the existence of industrial classes supported by facilities to carry out project-based projects learning. The five leadership dimensions must be implemented consistently by the principals starting with being courageous in taking innovative steps, being active in building togetherness, fostering collaboration with various parties, creatively developing new ideas for improvement, and promoting the quality of student education in the workplace. Principals also should prompt students, teachers, and stakeholders to assume responsibility for themselves, the school, and the industry. Principals should also be exemplary models by showing all basic aspects such as kindness, respect, and empathy.

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