Innovative Managerial Principles for Enhancing Teacher Performance and Student Learning Outcomes

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Abstract

Principal is known to posses a strategic role in designing an environment for the development and implementation of innovations in improving the quality of education. In order to better teachers' performance and student learning outcomes at the Elementary to High School or Vocational School levels in Jabodetabek, this study set out to examine the effects of the factors of critical thinking, collaboration, vision, emotional intelligence, and the school environment on principal managerial creativity. A total of 200 teachers were recruited as respondents and determined by the convenience sampling technique. Furthermore, the determination of the sample size was in line the formula devised by Krejcie and Morgan. Data collection was also carried out through online discussions and distributing questionnaires to respondents. The Mix method approach (a combination of quantitative and qualitative) was used and data analysis was performed using AMOS. The results showed that critical thinking, school vision, emotional intelligence, and the school environment had a positive influence on principal managerial creativity. In addition, the positive influence of principal managerial creativity on teacher performance and student learning outcomes was validated.

Keywords: *Principal Creativity, Teacher Performance, Student Learning Outcomes*

1. Introduction

Effectiveness, efficiency, and relevance of the learning process are increased by innovation to enhance the quality of education. Innovation plays an important role in equipping students with the skills necessary to confront the complexities of the modern world. The challenges within the educational field should be investigated to cultivate human resources well-prepared to engage with dynamic developments and exert a constructive influence on society.

Education must effectively foster the development of creative students who possess the abilities to think critically, collaborate, and proficiently articulate their ideas, both orally and in writing (Great, 2018). This underscores the need to cultivate students who are creative and exhibit independence, initiative, and the capability to proactively seek and devise solutions to challenges through innovative thinking. Students and other important stakeholders (such as principal) must have the ability to be creative. In realizing a leadership attitude, school principal

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is required to be creative in managing the educational institution.

Principal has a strategic role in designing an environment that supports the development and implementation of innovations to raise the standard for education outstanding performance. The creativity of this leadership is related to school, administrative, intracurricular, and extracurricular management, as well as community involvement. However, a number of characteristics, including as critical thinking, teamwork, vision, emotional intelligence, and the learning environment, are regarded to have an impact on creativity.

The ability to be creative is one that is required of both pupils and other important stakeholders, such as the principal. The role of the school principle requires innovative management of the educational facility in order to realize a leadership mentality. Education will only experience stagnant and inadequate results from leadership that tends to be boring, top-down hierarchical, didactic, and less creative in adjusting to environmental developments and changes. The PISA research also revealed that elementary school students' proficiency in science, literacy, and maths did not change on an annual basis. This is a result of the principal's lackadaisical leadership style, which resists change. (OECD, 2018).

The creativity of principal leadership is related to school, administrative, intracurricular, and extracurricular management, as well as community involvement. However, a variety of traits, including critical thinking, teamwork, vision, emotional quotient, and the educational setting, have an effect on creativity. These exogenous latent variables have an effect on the endogenous latent variable of principle leadership creativity. Critical thinking is the cornerstone of problem-solving, logical analysis, and evaluation. Critical thinking is the basis for finding problems, analyzing and evaluating logically, giving rise to creative power to build new knowledge (Heard et al., 2020; Hitchcock, 2015; Lai, 2011)

This study discusses the factors influencing the creativity of the principal leadership, teacher performance and student learning outcomes. In addition, the influence of these factors on Principle Managerial Creativity is explained. The results are expected to contribute to the development of education management science and should be considered in formulating strategic policies to increase the creativity of school principal.

2. Literature Review

2.1 Principle Creativity

The management of the school, the administration, the extracurricular and intracurricular programs, as well as community involvement, all fall within the category of the school principal's inventiveness. Critical thinking, teamwork abilities, school vision, emotional intelligence, and the learning environment all have an impact on creativity. These elements are exogenous latent variables that have an impact on the creativity of school principals, an endogenous variable. Finding challenges, logically analyzing and assessing them, and using that creativity to create new knowledge are all aspects of critical thinking (Heard et al., 2020; Hitchcock, 2015; Lai, 2011).

2.2 Critical Thinking

Critical thinking can be defined as the capacity to answer an issue thoroughly, methodically, and directly by employing understanding and specific justifications (Changwong et al., 2018; Ennis, 1991; Facione et al., 1995; Heard et al., 2020; Hitchcock, 2015; Lai, 2011; Shaw, 2014).

A critical thinker possesses the capacity to meticulously and accurately define problems, gather requisite information, select logical, relevant, and precise arguments, generate optimal solutions, and assess the ramifications of the decisions made (Cottrell, 2005; Ennis, 1991; Heard et al., 2020; Hitchcock, 2015; Lai, 2011). There are at least four such categories, including Relevance, Novelty, Outside Material, and Ambiquity (Levin, 2022).

2.3 Collaboration

In order to reach a goal, collaboration—a process in which parties exchange knowledge, resources, and responsibility for planning, executing, and assessing program activities—is a crucial component of creativity. This idea is a method of co-creating a collection of entities by maximizing their mutual involvement, which implies sharing risks, resources, duties, rewards, and the appearance of a shared identity (Camarinha-matos, 2010; Keyton, 2017; Scoular, et al, 2020).

The principal needs to encourage a variety of collaborations, including internal, external, learning, and study collaborations. Internal collaboration is the capacity to foster cooperation between member statuses in educational institutions, including the principal, To achieve common goals, teaching personnel (subject teachers, guidance and counseling teachers, sports instructors), administrative staff, and others work together. In contrast, the ability to form partnerships with parties outside of the school through sharing information, resources, and responsibilities for planning, implementing, and evaluating activity programs to achieve educational goals is known as external cooperation (Armstrong, 2015; Hausburg, 2015).

2.4 Vision

Vision is another aspect that affects a school principal's inventiveness, including a value orientation that entails a perspective of the school organization future. This vision should be compelling, offering a more favorable outlook than the existing conditions (Mombourquette, 2017; Nindyati, 2013). The vision includes at least four characteristics or indicators: goals, change, resource development, and innovation.

The vision is translated into goals that represent the outcome that the organization hopes to attain in the future. (Pont et al., 2011; Rothstein & Jacobsen, 2006). This variable, or the desire to carry out the transition process from given situations, affects changes. The method is used when one condition is assumed and a different state is desired through processes that direct planning, implementation, and evaluation. (Reinholz & Andrews, 2020; Rogers, 2003).

2.5 Emotional Intelligence

The capacity to regulate one's emotions, maintain harmony, and express oneself through social skills, self-awareness, self-control, self-motivation, and empathy. is known as emotional intelligence (Lestari, 2004). Since self-awareness is the capacity to identify one's own emotions and thoughts, mood is not destroyed or overwhelmed by them. Achieving an interior equilibrium marked by composure, self-discipline, lack of worry, avoidance of depression, and the cultivation of a pleasant emotional state is what emotional control includes. Empathy is the capacity to understand the feelings or concerns of others, accept their viewpoints, and show sensitivity and openness to hearing them out. The capacity to develop social interactions with others in order to foster familiarity, understanding, and cooperation.

2.6 Environment

The school's internal and external environments are another factor that affects the management ingenuity of the principal. Although the idea of the environment is related to all elements, it is only used in this study in relation to five specific areas: educational facilities, educational institutions, transportation, the physical environment, and the social environment.

Textbooks, supplemental materials, teaching aids, labs, the availability of adequate digital technology, and the internet are employed as learning facilities to assist instructional activities in schools. The school facility offers a learning environment including offices, classrooms, libraries, labs, and practicum spaces. The methods and procedures used to build systems that transport people and things from one location to another is known as transport infrastructure. This feature, which in the debate refers to highways and bus stations, refers to the method and routine of travelling to school. The physical environment includes the circumstances both within and outside of the school, such as the presence of suitable school buildings, office space, classrooms, and health facilities, as well as the accessibility of sporting and playing fields, school canteens, and parking lots.

The social environment in a school (principal, teachers, students, and others) encompasses the space or setting where people interact and communicate with one another, with groups, and with other groups.

2.6 Teacher Performance and Student Learning Outcomes

An important element to consider in achieving the management of educational staff, including all components, is the vision and objectives of a better future for schools contained in the organization. The management of human resources includes more than just the allocation of tasks and responsibilities to each individual worker status but also initiatives to enhance professionalism and work proficiency. Additionally, it is crucial to enhance teaching material preparation and mastery, make the most of available time, employ effective learning strategies, conduct evaluations, and engage in reflective practice. (Great, 2018).

3. Theoretical Framework

This study uses the endogenous variable of school principal creativity influenced by several factors, namely critical thinking, collaboration skills, school vision, emotional intelligence, and the school environment. The model was designed to examine the influence of principal managerial creativity on teacher performance and student learning outcomes. Several previous studies also focused on the path studied. Principal managerial leadership skills are related to teacher performance (Dzulfah, 2022; Habibi et al., 2019; Hartiwi et al., 2020) and student learning outcomes (Asmartuti, 2022; Baptiste, 2019; Ruslan & Restiana, 2020). Student learning results are positively and significantly influenced by teacher performance (Mahulae et al., 2020; Pido et al., 2023; Tambunan, 2021). Therefore, several hypotheses can be formulated, namely:

H1. *Critical thinking has a significant influence on principal managerial creativity.*
H2. *Collaborative ability does not have a significant effect on principal managerial creativity.*
H3. *School vision has a significant influence on principal managerial creativity.*
H4. *Emotional intelligence has a significant influence on principal managerial creativity.*
H5. *School environment has a significant influence on principal managerial creativity.*
H6. *Principal managerial creativity has a significant influence on student learning outcomes.*
H7. *Principal managerial creativity has a significant influence on student learning outcomes.*
H8. *Teacher performance has no significant effect on student learning outcomes.*
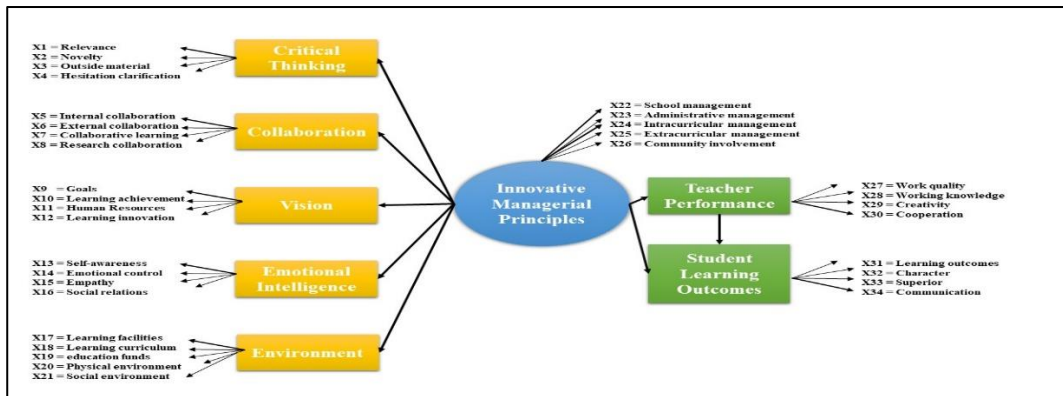From the description above, a study framework is built to approach the problem, as follows:

Figure 1: Theoretical Framework.

4. Study Methode

4.1 Sample

The samples in this study were teaching staff at the Elementary, Junior High, and High School/Vocational School levels who served in the Jabodetabek area.

4.2 Study Design

This study combined quantitative and qualitative method (mixed methods) to obtain the required data. The survey methods were conducted through the distribution of questionnaires and interviews. The indicators of the variables determined according to the study objectives were obtained using data method in the form of descriptive analysis, validity, reliability, and structural equation modeling (SEM) tests. The AMOS 24 device was used as a statistical analysis tool to carry out data testing.

4.3 Data Analysis

The data analysis used in this study includes validity, reliability, and SEM analysis. The validity test is carried out by applying Exploratory Factor Analysis (EFA). EFA is the right method for analyzing factors using various variables and the recommended minimum value to provide valid results is 0.50 (Hair et al., 2019). Reliability is used as a test effort to determine the consistency of the variables measured based on the linkage of indicators to one another. The reliability test formula uses Cronbach's alpha and the minimum value suggested in the reliability test is 0.70. The data analysis technique used in conducting the hypothesis is the Structural Equation Modeling (SEM) test using AMOS.

5. Result and Discussion

5.1 Respondent Profile

Respondents consist of 142 (71%) females and 58 (29%) males with varied age. The age range is 26 to 60 years with the most respondents aged 53 years with a total of 14 (7%). The majority had the last education, namely S1 with a total of 146 people (73%). This study obtained respondents with the longest teaching experience, namely 20 years with a total of 16 people (8%).

5.2 Validity Test

The validity test values are computed using standard factor loading values based on the output of the AMOS calculation findings and are shown in the following Table:
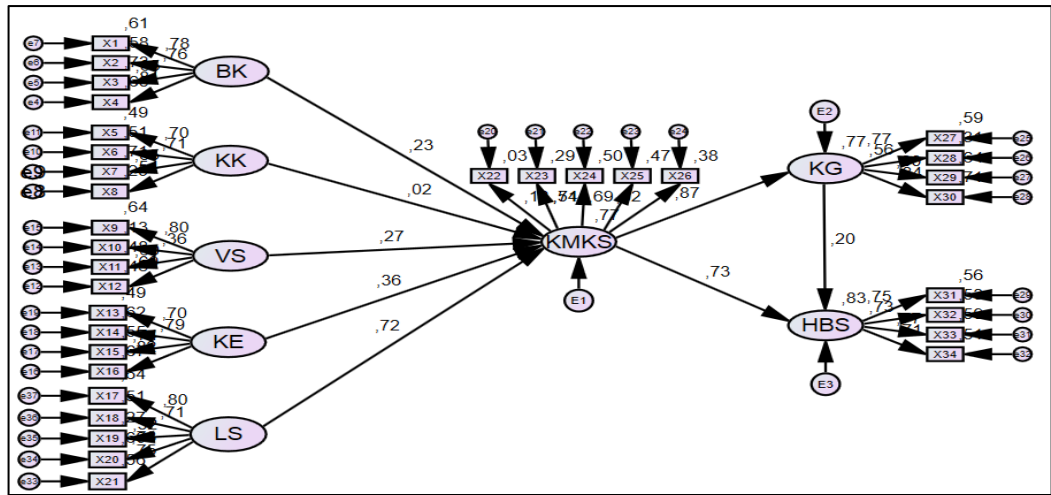

Figure 2: Initial Estimation of Standardized Loading Factors.

Table 1: Initial Standardized Loading Factors.

Latent	Indicator	Standardized Loading Factor (SLF)	SLF > 0.5
Critical Thinking (BK)	X1	0.780	Valid
	X2	0.761	Valid
	X3	0.853	Valid
	X4	0.808	Valid
Collaboration Ability (KK)	X5	0.702	Valid
	X6	0.712	Valid
	X7	0.846	Valid
	X8	0.539	Valid
School Vision (VS)	X9	0.800	Valid
	X10	0.364	Invalid
	X11	0.690	Valid
	X12	0.690	Valid
Emotional Intelligence (KE)	X13	0.699	Valid
	X14	0.790	Valid
	X15	0.742	Valid
	X16	0.821	Valid
School Environment (LS)	X17	0.801	Valid
	X18	0.714	Valid
	X19	0.519	Valid
	X20	0.778	Valid
	X21	0.746	Valid
Principal Managerial Creativity (KMKS)	X22	0.178	Invalid
	X23	0.540	Valid
	X24	0.706	Valid
	X25	0.687	Valid
	X26	0.616	Valid
Teacher Performance (KG)	X27	0.768	Valid
	X28	0.559	Valid
	X29	0.797	Valid
	X30	0.844	Valid
Student Learning Outcomes (HBS)	X31	0.750	Valid
	X32	0.730	Valid
	X33	0.766	Valid
	X34	0.711	Valid

Considering the estimation outcomes of the values of the standardized loading factor shown

in Figure 1 and Table 1, there are indicators with a standardized loading factor value of less than 0.5. Due to the standardized loading factor indicator value that is smaller than the critical value, the indicator has poor measurement validity and must be excluded from the model. Therefore, it is necessary to produce corresponding loading factor and critical values. The following presents the results of the standardized loading factor after being modified by removing the X10 and X22 indicators:
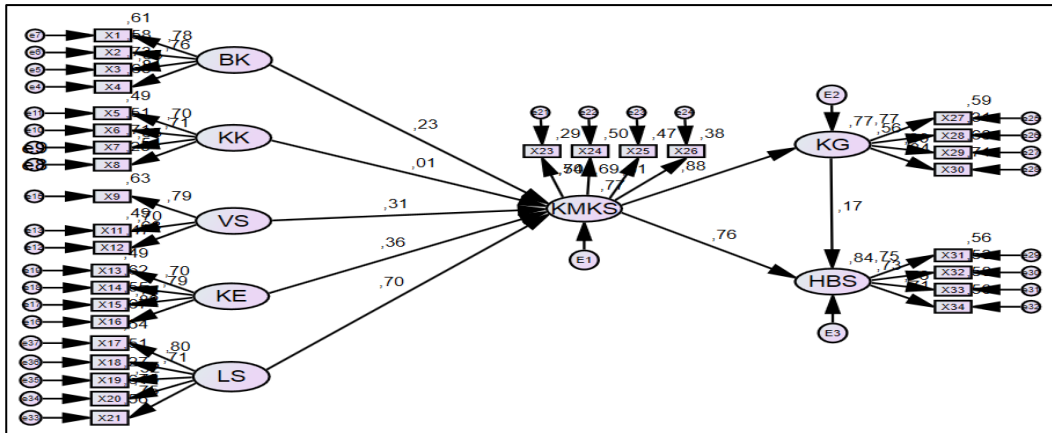

Figure 3: Final Estimation of Standardized Loading Factors.

Table 2: Final Standardized Loading Factors.

Latent	Indicator	Standardized Loading Factor (SLF)	SLF > 0.5
	X1	0.780	Valid
Critical Thinking (BK)	X2	0.762	Valid
	X3	0.852	Valid
	X4	0.807	Valid
	X5	0.702	Valid
Collaboration Ability (KK)	X6	0.712	Valid
	X7	0.846	Valid
	X8	0.540	Valid
	X9	0.794	Valid
School Vision (VS)	X11	0.698	Valid
	X12	0.682	Valid
	X13	0.699	Valid
Emotional Intelligence (KE)	X14	0.789	Valid
	X15	0.743	Valid
	X16	0.821	Valid
	X17	0.801	Valid
	X18	0.713	Valid
School Environment (LS)	X19	0.518	Valid
	X20	0.778	Valid
	X21	0.746	Valid
	X23	0.537	Valid
Principal Managerial Creativity (KMKS)	X24	0.705	Valid
	X25	0.689	Valid
	X26	0.614	Valid
	X27	0.768	Valid
Teacher Performance (KG)	X28	0.557	Valid
	X29	0.796	Valid
	X30	0.842	Valid
	X31	0.748	Valid
Student Learning Outcomes (HBS)	X32	0.729	Valid
	X33	0.764	Valid
	X34	0.710	Valid

There are indicators with standardized loading factor values less than 0.5 but still

above 0.3, according to the projected findings of the values shown in Figure 2 and Table 2. It may be said that the indicators have good measurement validity because their values are less than 0.5 but greater than 0.3 for the standardized loading factor indicators.

5.3 Reliability Test

Table 3: Construct Reliability Results.

Latent	Construct Reliability	Conclusion
Critical Thinking (BK)	0.877	Reliable
Collaboration Ability (KK)	0.797	Reliable
School Vision (VS)	0.769	Reliable
Emotional Intelligence (KE)	0.849	Reliable
School Environment (LS)	0.882	Reliable
Principal Managerial Creativity (KMKS)	0.733	Reliable
Teacher Performance (KG)	0.833	Reliable
Student Learning Outcomes (HBS)	0.827	Reliable

According to Table 3, the construct reliability (CR) coefficient for the latent variables is larger than or equal to the crucial value (CR 07). This shows that all of these latent constructs have good reliability.

5.4 Model Fit Test (Goodness of Fit)

Table 4: Evaluation of Goodness of Fit Criteria.

	Goodness of Fit measure	Target Match Rate	Estimation Results	Match Level
1	Chi-Square	p-values> 0.05	0.000	Bad fit
2	CMIN/DF	RMSEA < 5 or RMSEA < 2	4,220	Bad fit
3	GFI	GFI ≥ 0.90	0.611	Bad fit
4	RMSEA	RMSEA 0.05 – 0.08	0.127	Bad fit
5	AGFI	AGFI ≥ 0.90	0.725	Bad fit
6	TLI	TLI ≥ 0.90	0.533	Bad fit
7	NFIs	NFI ≥ 0.90	0.652	Bad fit
8	PNFI	PNFI ≥ 0.6 – 0.90	0.605	Good fit
9	PGFI	PGFI ≥ 0 – 1.0	0.532	Good fit

From the model fit analysis, 7 measures of Goodness of Fit are not good while 2 measures show unfavorable results.

5.5 Hypothesis Testing

In this study, the path coefficient, t-value, and p-value are used for hypothesis testing. The path coefficient and t-value show the importance and forecasts (Abdillah & Hartono, 2015: 197). The t-value and p-value can be used to evaluate predictions and significance in hypothesis testing, claim Abdillah & Hartono (2015: 211). The estimated outcomes from the Amos program are shown in the following.

Table 5: Hypothesis Test Results.

Influence			Path Coefficient	T count	P-value	Hypothesis (0.05)
KMKS	<---	BK	0.225	2,769	0.006	Significant
KMKS	<---	KK	0.007	0.085	0.932	Not significant
KMKS	<---	VS	0.315	2,767	0.006	Significant
KMKS	<---	TO	0.362	3,313	***	Significant
KMKS	<---	LS	0.699	6,049	***	Significant
kgs	<---	KMKS	0.877	10.384	***	Significant
HBS	<---	KMKS	0.765	4,487	***	Significant
HBS	<---	kgs	0.168	1,001	0.317	Not significant

Based on Table 5, 6 tested hypotheses have a positive effect, while the other 2 do not have a positive effect. Critical thinking has a significant influence on principal managerial creativity with a p-value and path coefficient of 0.006 <0.05 and 0.225 which indicates a positive direction. Collaboration ability does not have a significant effect on principal managerial creativity because the p-value and path coefficient is 0.932 > 0.05 and 0.007, meaning a negative influence.

Principal managerial creativity is significantly influenced by school vision, with a p-value coefficient of 0.006 0.05 and a route coefficient of 0.315 indicating a favorable trend. With a p-value and path coefficient of 0.000 0.05 and 0.362, respectively, showing a positive trend, emotional intelligence significantly affects major managerial creativity.

Principal management creativity is significantly influenced by the school environment, as shown by the path coefficient and p-value of 0.000, 0.05, and 0.699, respectively, which point in the right direction. With a p-value and path coefficient of 0.000 0.05 and 0.877, respectively, showing a positive trend, principal managerial creativity had a substantial impact on teacher performance.

With a p-value and path coefficient of 0.000 0.05 and 0.765, respectively, showing a positive trend, principal managerial creativity had a substantial impact on student learning outcomes. With a p-value and path coefficient of 0.317 > 0.05 and 0.168, respectively, teacher performance has a negative impact on student learning outcomes.

6. Discussion

The outcomes of the formulated hypotheses are based on eight variables that can help with the growth of management creativity in general. The exam results demonstrate a favorable relationship between principle managerial creativity and critical thinking, school vision, emotional intelligence, and the school environment. Additionally, principle managerial innovation has a favorable impact on teacher efficacy and student learning outcomes. This result validates previous studies, where the level of principal managerial creativity can affect teacher performance (Sastradiharja et al., 2022). The abilities of principal who is creative and innovative can promote better teacher performance and also students will not only master theory, but also practice to have certain skills and expertise (Yohana, 2021). This result also validates previous study, where principal creativity can affect student learning outcomes (Baptiste, 2019) and academic achievement. However, the empirical results provide insight that collaboration skills do not affect principal creativity. There may be other factors that are more dominant and teacher performance cannot affect student learning outcomes. Other factors have a greater impact on influencing student learning outcomes besides teacher performance.

7. Conclusion

The conclusion that innovative managerial principles significantly enhance both teacher performance and student learning outcomes suggests that adopting creative and forward-thinking leadership strategies positively influences the effectiveness of teachers and, consequently, improves student academic achievements. This conclusion emphasizes the importance of innovative approaches in school leadership to create a conducive environment for both educators and students, fostering a positive impact on the overall educational experience and outcomes.

Critical thinking serves as a cornerstone for effective decision-making and problem-solving within a managerial context. Principals who possess strong critical thinking skills are better equipped to navigate the complexities of their roles and foster an environment conducive to creativity and innovation.

Collaborative ability did not significantly influence principal managerial creativity suggests that, based on the available evidence, there isn't a strong link between a principal's collaborative skills and their capacity for individual creative decision-making. This could be due to factors such as the focus on individual creativity, the measurement methods employed, contextual influences, or the dominance of other factors impacting managerial creativity in the study. Ultimately, the conclusion underscores the complexity of the relationship between collaborative ability and the creative aspects of managerial leadership.

School vision had a significant influence on principal managerial creativity implies that the clarity and alignment with a shared vision within a school setting positively impact a principal's ability to engage in creative and effective managerial practices. A strong and compelling school vision appears to be a driving force behind the principal's decision-making and leadership, fostering a culture that encourages creativity and innovation in the pursuit of common goals.

Emotional intelligence had a significant influence on principal managerial creativity suggests that a principal's ability to understand and manage emotions, both in themselves and others, positively affects their creative decision-making and managerial effectiveness. Emotional intelligence appears to be a valuable trait for principals, contributing to a more adaptive and innovative leadership approach within the school context.

School environment had a significant influence on principal managerial creativity indicates that the surrounding organizational atmosphere, culture, and conditions within a school play a crucial role in shaping a principal's ability to be creative in their managerial practices. A positive and supportive school environment is associated with principals who demonstrate greater creativity in their decision-making and leadership strategies.

Principal managerial creativity had a significant influence on teacher performance suggests that when school leaders demonstrate creative and innovative managerial approaches, it positively impacts the performance of teachers. This implies that a creative leadership style fosters a conducive environment for teaching excellence and contributes to overall positive outcomes in terms of teacher effectiveness and performance.

Principal managerial creativity had a significant influence on student learning outcomes indicates that when school leaders employ creative and innovative managerial practices, it positively affects the educational achievements of students. This suggests that a principal's creative approach contributes to an environment that enhances teaching and learning, leading to improved student performance and outcomes.

Teacher performance had no significant effect on student learning outcomes suggests that, based on the analysis or evidence, variations in individual teacher performance did not show a statistically significant correlation with differences in student learning outcomes. Other factors or influences may have played a more significant role in shaping students' academic achievements in the context studied.

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