

Decision Making Styles of School Administrators and the Level of Trust of Teachers in Public Schools

Dr. Fe F. Faundo^a, Mark Lester R. Antonio^b, Ma. Carina Santiago-Villanueva^c

fe.faundo@dyci.edu.ph, marklester.antonio@deped.gov.ph, carina.villanueva@dyci.edu.ph
Dr, Yanga's Colleges, Inc. Wakas, Bocaue, Bulacan, Philippines

Abstract

The total operation of an educational institution is under the authority and leadership of school administrators. The success or failure of an institution largely depends on the kind of administrator appointed to lead the institution. The operation of the school is dependent on the decision-making style of the school administrators. Meanwhile, trust of the teachers in the administrator, in colleagues and customers (parents and learners) is also important. Decision making is a perennial challenge for the school administrator. This will create organizational condition that would be conducive for teachers to continuously improve their teaching practices by providing encouragement and fostering an environment that builds trust as part of continuous development. The difference between an average administrator and a good one lies in the quality and credibility of its administration (Pietsch & Tulowitzki, 2017, Yahyaoui, Maamar & Al-Khafajiy, 2022)). Influences also vary with the level of work done. For an effective administrator the important determinants include previous relevant education and experience, values and views of work that govern the choices, behavior, and aspirations of both the administrators and the teachers. Empowerment as shared decision-making is essential to school reform and to the changing demands in a global world. The principal is the building leader who structures the climate to empower both teachers and learners at the site (Shen et. al., 2020, Harris & Lambert, 2003).

Key Words: *teachers; performance; decision-making; trust; school administrators*

Introduction

Cognizant to the essential on the instructional improvement of teachers and the attainment of a successful school, the researchers deemed it very necessary to undertake the relationship between the decision-making practices of administrators and the level of trust of teachers to ensure efficiency of performance of the administrators and the teachers alike (Tschannen-Moran, 2004, McKinney, Labat & Labat, 2015)). Accordingly, educators must build trusting relationships with learners and their parents to facilitate quality achievements. The educators must work in concert to have open communication with each other.

Credibility Trust Theory exists as the most critical factor in determining the level of trust everybody has (Gas & Seiter, 2018). A credible source of information makes for quicker and firmer decisions. A credible person is an expert (experienced, qualified, intelligent, skilled) and trustworthy (honest, fair, unselfish, caring) Charisma can increase credibility. Charismatic people, in addition to being credible, are extroverts, composed and sociable. Credibility is context-dependent, and an expert in one situation may be incompetent in another. It is also a cue that is used in selecting the peripheral route to decision-making thus building trust of the followers.

Credibility-enhancing actions include highlighting own experience and qualifications; showing cares about the other person and has their best interests at heart, showing similar to them using their language, body language, dress, etc., being assertive quickly and logically refuting counter-arguments, leveraging the credibility of others, thus highlighting the credibility of the sources of information, and being introduced by a credible person. When making a big decision, one must be careful to examine the real credibility of the administrators, including what they stand to gain from the decision.

A person's decision-making style describes how a person seeks, organizes, and weighs information. The scientific study of leadership began with a focus on the traits of effective leaders (Johnson, 2020). The scientific study of leadership began with a focus on the traits of effective leaders (Leithwood, Harris & Hopkins, 2020). The basic premise behind trait theory was that effective leaders are born, not made, thus the name is sometimes applied to early versions of the idea of "great man theory" (Malos, 2012). Leader trait research examines the physical, mental, and social characteristics of individuals who can lead a group. In general, this study looked for a significant association between individual traits and measures of leadership effectiveness based on their decision-making styles. The initial conclusion from studies of school administrators' decision-making styles was that there were no universal traits that consistently separated effective leaders from other individuals. Finally, early traits that consistently separated effective leaders from other individuals. Finally, early trait research did not consider the impact of situational variables that might moderate the relationship between leader traits and treasures of leader effectiveness.

The readiness of the school administrators and the teachers may also be attributed to the degree of confidence they possess (Goh & Sigala, 2020). The Theory of Self-Efficacy (Bandura, 1997), high-self efficacy will only lead to productive behavior in an activity if the outcome expectancy for that engagement is high. This theory conceptualizes a person's perceived ability to perform task. According to theory and research, self-efficacy makes a difference in how people think, feel and act. In terms of feeling, a low sense of self efficacy is associated with depression, anxiety, and helplessness. Person with low self-efficacy also have low self-esteem, and they harbor pessimistic thoughts about their accomplishments and personal development. In terms of thinking, it has a strong sense of facilitating cognitive processes and performance in a variety of settings, including quality of decision-making and academic achievement.

Self-efficacy has an influence on preparing action because self-related cognition is a major ingredient in the motivation process. Self-efficacy levels can enhance or impede motivation. People with high self-efficacy choose to perform more challenging tasks. They set themselves higher goal and stick on them.

Furthermore, under the DECS Order No 17. of 1997, all public and private schools were vested at decentralizing the administration of public schools by the school principals with instructional, administrative, and fiscal autonomy. The educational legislation grants authority, responsibility, and accountability to school administrators, including the development of the schools, improvement programs, management of school resources, and fostering of active school-family-community linkages.

The researchers believed that the specific function of administration is to develop and regulate the decision-making process; an effective decision-making requires knowledge and interpersonal skills, thus understanding effective professional learning and how to process as part of an overall strategy for school improvement that will create organizational conditions that would be conducive for teachers to continuously improve their teaching practices by providing encouragement and fostering an environment that builds trust as part of continuous development.

The researchers believed that the specific function of administration is to develop and regulate the decision-making process in the most effective manner possible. Effective decision-making requires knowledge and interpersonal skills, thus understanding the effective professional learning and how it can be part of an overall strategy for school improvement. It will create organizational conditions conducive for teachers to continuously improve their teaching practices by enhancing encouragement and fostering an environment that builds trust as part of continuous development. Valid decisions improved the competency of the teachers and learners, and a conducive relationship with the parents. It creates organizational conditions conducive for teachers to continuously improve their teaching practices by encouraging and fostering an environment that builds trust as part of continuous development. The researchers believed that the specific function of administration is to develop and regulate the decision-making process in the most effective manner possible. Effective decision-making requires knowledge and interpersonal skills, thus understanding effective professional learning and how it can be practice as part of an overall strategy for school improvement that builds trust as part of continuous development.

Methodology

Research Design

This study used the descriptive normative survey method to assess the decision-making styles of the school administrators and the level of trust of teachers in three dimensions such as teachers' trust in the school administrators, colleagues, and clients (learners and parents) in

selected public schools in the Division of Bulacan. The quantitative ways of obtaining descriptive data used two sets of questionnaires to gather information about the decision-making styles of the public school administrators and the level of trust of teachers, and personal interviews are somewhat private and, for ethical considerations, must not disclose.

Participants

The 450 respondents in selected public schools were informed regarding the purpose of the study and given ample time to complete the questionnaires. The researcher used purposive and stratified purposeful random sampling according to the population of small, medium, and big schools according to size, the basis of which was the learners' population. The researchers chose 18 schools that comprised 50 school administrators: 24 Principal II, 19 Principal I, 2 Head Teacher III, 3 Teacher-In-Charge, and 2 Officer in Charge. The 400 teacher-respondents consist of 10 Master Teacher II, 9 Master Teacher I, 50 Teacher III, 77 Teacher II, and 254 Teacher I.

Instruments and Data Gathering

For the school administrators, the validated questionnaire available on the internet designed by Sharon Gerstmeier based on the study of Rowe, Mason, Dickel, Mann, and Mocker (1994)-The Decision Style Inventory or DSI includes 20 items to describe directive, analytical, behavioral and conceptual as categorized by different level such as very dominant, dominant, back-up and least preferred. Each question is answerable by assigning a corresponding number on which 8 means most likely, 4 means likely, 2 means sometimes, and 1 is least likely. The answers picked only once are summed up in each row corresponds to the decision-making styles score as very dominant, dominant, back-up, or least preferred. The researchers used Rowe's (2008) validated instrument readily available for the teacher-respondents. The Omnibus Trust Scale (26 Likert Items) developed by Wayne K. Hoy measures the three dimensions of teacher's level of trust in the school administrators, colleagues, and clients measured by the Six-Point Likert Scale which can be used for either elementary or secondary schools.

Data Analysis

The data gathered were organized and collated manually and were processed using the Statistical Package for Social Sciences (SPSS). The researchers describe the teacher's profiles using mean, standard deviation, frequency counts, and percentages while the Multiple Regression analysis and ANOVA measured and determined the decision-making styles of the school administrators on the level of trust of teachers. The DSI is interpreted as follows: 8 as most appropriate; 4 as next most appropriate; 2 as appropriate, and 1 as least appropriate. The range of style score are as follows:

Style	Least Preferred	Back-up	Dominant	Very Dominant
Directive	20-67	68-81	82-89	90-160
Analytical	20-82	83-96	97-104	105-160
Conceptual	20-72	73-86	87-94	95-160
Behavioral	2--47	48-61	62-69	70-160

Ethical Consideration

This research followed the fundamental principles of research ethics stipulated in the Belmont Report of 1979 – Ethical Principles and Guidelines for the Protection of Human Subjects of Research. The researchers followed the Standard Operating Procedures in gathering data, such as securing written letters asking permission from the Division Superintendent, District Supervisors, School Administrators, and teachers. Classes were not disturbed during the gathering of data and additional personal interviews of the respondents.

Results and Discussion

Table 1. Decision Making Styles of School Administrators

Level	Directive		Analytical		Conceptual		Behavioral	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Very Dominant	7	14.00	17	34.00	12	24.00	38	76.00
Dominant	2	24.00	19	38.00	7	14.00	4	8.00
Back - up	19	38.00	9	18.00	10	20.00	4	8.00
Least Preferred	12	24.00	5	1.00	21	42.00	4	8.00
Total	50	100.00	50	100.00	50	100.00	50	100.00

Table 1 showed that 38 or 76% of the school administrators used conceptual decision-making styles as very dominant. It could be gleaned on the table that less than half of the school administrators preferred to use directive decision-making style as back up. Nearly half preferred to use analytical decision-making style least preferred. Less than half used behavioral style as dominant, and a great number used the conceptual decision-making style very dominant. This could mean the the administrators are people oriented which tend to focus on the needs of the people (teachers and learners) around them. These administrators are more open to new information, thus lead them to better outcomes. 38 or 76% of the school administrators used conceptual decision-making styles as very dominant. It is shown from the table that conceptual style was the most preferred style mostly of the school administrators in the public schools in the Division of Bulacan. It could mean the administrators are people-oriented and focus on the needs of the people (teachers and learners) around them. These administrators are more open to new information, thus leading them to better outcomes.

Meanwhile, 38% or 19 school administrators used behavioral style as dominant. These administrators were low in cognitive complexity. The information is much more suitable for them in making decisions. Such a finding is attributed to most of the teachers who supported

these administrators because they felt that their feelings were considered important, and 19 or 38% of administrators used a directive decision-making style as a backup. It could mean that these administrators used a directive style is task-oriented and low in cognitive complexity when dominant is inappropriate. 21 or 42% of school administrators used the analytical decision-making style least preferred. It could mean that the preference of the administrators for the analytical style is task-oriented and high in cognitive complexity was seldom used. It could mean that these administrators gave less importance to the obligation in the school as a decision-maker. Thus, the administrators imposed uniform decisions and rules to be followed by the teachers in each district.

Such findings by Freestone, Thompson & Williams (2006), Omari (2013), Bayburin, Bycik, Filinov, & Isaeva (2015, and Summak & Kalman (2020) in their study about leadership, stated that directive, analytical, conceptual, and behavioral styles can be effective if used in the proper situation, the current reform initiative favors the adoption of the conceptual style as very dominant.

The data in Table 2 revealed that teachers' trust in the school administrators' competency in doing their job yielded the highest mean value of 5.15 interpreted as high. Butler and Cantrell (1984) posited that competence is the first component of a high trust relationship. This implies that the teachers trust the abilities and performance of their administrator in doing their job, influencing a higher level of teachers' trust.

Table 2. Level of Trust of Teachers in School Administrators

Items	Frequency							Mean	Interpretation
	6	5	4	3	2	1			
1. Teachers in this school trust the principal	63	254	82	1	0	0	4.95	Moderate	
4. Teachers here are suspicious of most of the principal's actions*	43	36	92	201	28	0	3.66	Low	
7. Teachers in this school have faith in the integrity of the principal	84	272	33	11	0	0	5.07	High	
9. The principal here is typically acts in the best interest of teachers	106	224	62	5	3	0	5.06	High	
11. The principal of this school does not show concern for the teachers*	116	179	0	91	11	3	4.72	Moderate	
15. Teachers in this school can rely on the principal	75	301	20	4	0	0	5.12	High	
18. The principal in this school is competent in doing his/her job	84	299	11	6	0	0	5.15	High	
23. The principal does not tell teachers what is really going on	114	17	8	9	198	54	3.81	Low	
Overall Mean							4.69	Moderate	

*

Reverse Scoring

Such findings supported by Elche & Palomino (2020), Lubbadah (2020) Fiedler (2006), Bass (1985), and Goleman (2017, 2001) stressed that the more desirable performance of the leader, the more he becomes effective. It could mean that personal trust is an essential value to an individual. The table also showed that the teachers' trust in administrators yielded an overall mean of 4.69 interpreted as moderate. The trust of the teachers' in the school administrators is somewhat inadequate. To determine what accounted for the development of trust were: principals being kind toward people, cheerfully presenting themselves, patience, thoughtful of other's feelings, respectful, friendly, and approachable.

Table 3 showed that teachers' faith in the integrity of their colleagues yielded the highest mean value of 5.06, interpreted as high. It could mean that the teachers have the spirit of professional loyalty, confidence, faith in one another, self-sacrifice for the coming good, and full cooperation with colleagues at all times (Code of Ethics for Professional Teachers).

Table 3. Level of Trust of Teachers in Colleagues

Items	Frequency						Mean	Interpretation
	6	5	4	3	2	1		
1. Teachers in this school trust each other	58	116	226	0	0	0	4.58	Moderate
4. Teachers in this school typically look out for each other	6	175	211	0	8	0	4.43	Moderate
7. Teachers in this school are suspicious of each other*	84	55	105	156	0	0	4.17	Moderate
11. Even in difficult situations, teachers in this school can depend on each other.	41	130	171	2	1	55	4.11	Moderate
12. Teachers in this school do their jobs well	32	315	52	1	0	0	4.95	Moderate
15. Teachers here have faith in the integrity of their colleagues	31	363	5	0	0	1	5.06	High
18. Teachers in this school are open with each other	0	271	129	0	0	0	4.68	Moderate
23. When teachers in here tell you something, you can believe it	1	68	328	2	1	0	4.68	Moderate
Overall Mean							4.51	Moderate

*

Reverse Scoring

Mercer & Gregersen (2020) Bryk and Schneider (2003), and Shirk & Shirk (1982) supported that in a relationship, each party maintains an understanding of their role's obligations and holds some expectations about the obligations of the other parties. For a school community to work well, teachers must achieve agreement in each role relationship in terms of understanding the personal obligations and expectations of others.

Table 4 showed that teachers' belief that their learners are competent registered the highest value of 5,39. It means that teachers' trust in clients is high. The teachers have high hopes that their learners have the potential to succeed academically. According to Dayagbil, Palompon, & Garcia (2021), Morris (2021), Ibrahim & Zaatari (2020), Castle (2020), Furlong & Maynard (1995), and Hughes (2005), teachers foremost concern is the interest and welfare of the learners.

Table 4 Level of Trust of Teachers in Clients (learners and parents)

Items	Frequency						Mean	Interpretation
	6	5	4	3	2	1		
1. Teachers in this school trust their learners	96	120	100	84	0	0	4.57	Moderate
4. Teachers in this school trust the parents	58	7	332	0	3	0	4.29	Moderate
10. Learners in this school care about each other	28	267	26	75	4	0	4.6	Moderate
11. Parents in this school are reliable in their commitments	1	139	259	1	0	0	4.35	Moderate
18. Teachers can count on parental support	1	200	199	0	0	0	4.51	Moderate
22. Teachers here believe learners are competent	163	231	5	1	0	0	5.39	High
24. Teachers think that most of the parents do a good job	0	194	94	106	6	0	4.19	Moderate
23. Teachers can believe what parents tell them	0	97	36	267	0	0	3.58	Low
24. Learners here are secretive	0	70	86	136	108	0	3.30	Low
Overall Mean							4.28	Moderate

Table 4 showed that teachers' belief that their learners are competent registered the highest value of 5,39. It means that teachers' trust in clients is high. The teachers have high hopes that their learners have the potential to succeed academically. According to Dayagbil, Palompon, & Garcia (2021), Morris (2021), Ibrahim & Zaatari (2020), Castle (2020), Furlong & Maynard (1995), and Hughes (2005), teachers foremost concern is the interest and welfare of the learners.

Meanwhile, the data showed that the level of trust on clients' trust and openness has the lowest mean value of 3.30, interpreted as low. It could mean that the teachers were doubtful. The learners were not telling the truth when confronted. An overall mean of 4.28, interpreted as moderate, signified that teachers established and maintained cordial relations with parents and learners in their school in moderation.

Table 5 determines the combined effects of trust of teachers in school administrators in terms of age. Combining the effects of the level of decision-making style of school administrators on the

level of trust of teachers in the school administrators, a non-significant F value of .600 was obtained. Based on the data, directive, analytical, behavioral, and conceptual decision-making styles showed no significant effect on the teachers' level of trust in school administrators manifested significant value.

Table 5. Effects of Decision Making Styles of Administrators on the Teacher's Level of Trust in School Administrators

Variables	Beta	T	Sig. t
Decision Making Styles			
Directive	.006	-.094	.925
Behavioral	.053	.828	.408
Analytical	-.010	-.169	.866
Conceptual	-.088	-1.509	.132
Teacher's Profile			
Age	-.182	-1.790	.074
Sex	.013	.253	.800
Civil	.047	.852	.395
Status			
Income	-.056	-1.010	.313
Length of Service	.140	1.351	.177
Rank	0.16	.231	.818
	0.28	.431	.667
Educational Attainment			
R ² = .023	F = .84		Signif F = .600

Table 6 determines the combined effects of trust of teachers in school administrators in terms of age. Combining the effects of the level of decision-making style of school administrators on the level of trust of teachers in the school administrators, a non-significant F value of .600 was obtained. Based on the data, directive, analytical, behavioral, and conceptual decision-making styles showed no significant effect on the teachers' level of trust in school administrators manifested significant value. It could be interpreted that the level of trust of teachers is not influenced by the school administrator's decision-making style. Such findings could be attributed to the teachers' attitude with their administrators to prevent conflicts.

Table 6. Effects of Decision Making Styles of Administrators on the Teacher's Level of Trust on Colleagues

Variables	Beta	T	Sig. t
Decision Making Styles			
Directive	.048	.781	.436
Behavioral	.076	1.202	.230
Analytical	.054	.928	.354
Conceptual	.223	3.873	.000
Teacher's Profile			
Age	-.113	-1.125	.261
Sex	.053	1.023	.307
Civil	-.005	.93	.926
Status			
Income	0.29	.524	.600
Length	.077	.754	.451
of Service			
Rank	-.037	-.537	.591
	.004	.063	.950
Educational Attainment			
R ² = .046	F	—	Signif F=.067
	1.719		

Based on the findings shown in Table 7, from the four decision-making styles, conceptual style manifested a highly significant effect on the teachers' level of trust in colleagues as manifested by the significant t value of .000 lower than the .01 level of significance. This explains that the conceptual decision-making style is highly significant to the level of trust of teachers for colleagues. The findings proved that the more dominant the conceptual decision-making style, the higher the level of trust of teachers in colleagues. It could mean that removing obstacles in their peer relationship will share more emotional support with them and develop a more trusting relationship.

Table 7. Effects of Decision Making Styles of Administrators on the Teacher's Level of Trust on Clients (learners and parents)

Variables	Beta	T	Sig. t
Decision Making Styles			
Directive	.107	1.753	.080
Behavioral	.152	2.43	.015
Analytical	.194	3.376	.001
Conceptual	-.010	-.171	.864
Teacher's Profile			
Age	-.012	-.122	.903
Sex	-.058	-1.134	.257
Civil Status	-.003	-.056	.956
Income	0.17	.318	.750
Length of Service	-.027	-.271	.787
Rank	.045	.659	.510
Educational Attainment	.109	1.729	.085
R ² = .070	F = 2.668		Signif F=.003

Table 7 showed that out of four (4) decision-making styles, analytical and behavioral styles contributed significantly to the teachers' level of trust in clients based on the significant t value of .001 and .015 respectively, at a .05 significance level. The findings proved that the more dominant the analytical and behavioral decision-making style, the higher the level of trust of teachers in clients, controlling for the profile variables. It explains that the administrators influenced the teachers to have a good relationship with the clients. The better the administrators' relationship with the parents possibility that they will support every program and project the school needs. In effect, the development of the school provides opportunities for the teachers to trust the clients' participation. In general, the decision-making style of the administrators does not significantly affect the teachers' trust in school administrators controlling for the profile variables.

References:

- Al-Omari, A. A. (2013). The Relationship between Decision Making Styles and Leadership Styles among Public Schools Principals. *International Education Studies*, 6(7), 100-110.
- Bass, B. M. (1985). Leadership: Good, better, best. *Organizational dynamics*, 13(3), 26-40.
- Bayburin, R., Bycik, N., Filinov, N., Isaeva, N., & Kasprzhak, A. (2015). Does conceptual decision-making style make school principal an efficient reforms promoter. *Higher School of Economics Research Paper No. WP BRP*, 34.
- Bryk, A. S., & Schneider, B. (2003). Trust in schools: A core resource for school reform. *Educational leadership*, 60(6), 40-45.
- Castle, K. (2020). *Early childhood teacher research: From questions to results*. Routledge.
- Dayagbil, F. T., Palompon, D. R., Garcia, L. L., & Olvido, M. M. J. (2021, July). Teaching and learning continuity amid and beyond the pandemic. In *Frontiers in Education* (Vol. 6, p. 678692). Frontiers Media SA.
- Elche, D., Ruiz-Palomino, P., & Linuesa-Langreo, J. (2020). Servant leadership and organizational citizenship behavior: The mediating effect of empathy and service climate. *International Journal of Contemporary Hospitality Management*, 32(6), 2035-2053.
- Fiedler, F. E. (2006). The contingency model: A theory of leadership effectiveness. *Small groups: Key readings*, 369, 60051-9.
- Freestone, R., Thompson, S., & Williams, P. (2006). Student experiences of work-based learning in planning education. *Journal of planning education and research*, 26(2), 237-249.

Furlong, J., & Maynard, T. (1995). *Mentoring student teachers: The growth of professional knowledge*. Psychology Press.

Goh, E., & Sigala, M. (2020). Integrating Information & Communication Technologies (ICT) into classroom instruction: teaching tips for hospitality educators from a diffusion of innovation approach. *Journal of Teaching in Travel & Tourism*, 20(2), 156-165.

Goleman, D. (2017). *Leadership that gets results (Harvard business review classics)*. Harvard Business Press.

Hughes, J. (2005). The role of teacher knowledge and learning experiences in forming technology-integrated pedagogy. *Journal of technology and teacher education*, 13(2), 277-302.

Ibrahim, A., & El Zaatari, W. (2020). The teacher–student relationship and adolescents’ sense of school belonging. *International Journal of Adolescence and Youth*, 25(1), 382-395.

Johnson, S. M. (2020). *Where teachers thrive: Organizing schools for success*. Harvard Education Press.

Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School leadership & management*, 40(1), 5-22.

Lubbadeh, T. (2020). Emotional intelligence and leadership—the dark and bright sides. *Modern Management Review*, XXV, 27, 39-50.

McKinney, C. L., Labat Jr, M. B., & Labat, C. A. (2015). Traits possessed by principals who transform school culture in national blue ribbon schools. *Academy of Educational Leadership Journal*, 19(1), 152.

Maloş, R. (2012). THE MOST IMPORTANT LEADERSHIP THEORIES. *Annals of Eftimie Murgu University Resita, Fascicle II, Economic Studies*.

Mercer, S., & Gregersen, T. (2020). *Teacher wellbeing*. Oxford University Press.

Pietsch, M., & Tulowitzki, P. (2017). Disentangling school leadership and its ties to instructional practices—an empirical comparison of various leadership styles. *School effectiveness and school improvement*, 28(4), 629-649.

Rowe, K. J., Robinson, V. M. J., & Lloyd, C. A., (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, 44, 635-674

Shen, J., Wu, H., Reeves, P., Zheng, Y., Ryan, L., & Anderson, D. (2020). The association between teacher leadership and student achievement: A meta-analysis. *Educational*

Research Review, 31, 100357. Shirk, S. L., & Shirk, S. L. (1982). *Competitive comrades: Career incentives and student strategies in China*. Univ of California Press.

Summak, S. M., & Kalman, M. (2020). A Q-methodological analysis of school principals' decision-making strategies during the change process at schools. *CEPS Journal*, 10(2), 123-144.

Williams, R. B. (1997). *The relationship between personal characteristics and situational complexity and decision-making style flexibility in New Brunswick school principals*. The University of Maine.

Yahyaoui, H., Maamar, Z., Al-Khafajiy, M., & Al-Hamadi, H. (2022). Trust-based management in IT federations. *Future Generation Computer Systems*, 136, 182-192.