

Components and Indicators of School Administrators in the Era of the VUCA World in Primary Schools in Special Areas of Thailand's Southern Border Provinces

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ABSTRACT

This research aimed to: (i) determine the components and indicators of school administrators in the era of global change in primary schools in the special area of the southern border provinces, (ii) analyze the components and indicators of educational administrators in the era of global change, and (iii) investigate the development guidelines for educational administrators in the era of global change. This study followed mixed methods design. The sample consisted of 400 teachers and 5 administrators. The research results indicated that: (1) The components and indicators of school administrators in an era of world changes have the following details: (i) clarity, (ii) vision, and (iii) recovery. The results of the first-order confirmatory factor analysis of the measurement model are consistent with the empirical data. All latent variables are reliable and consistent with the empirical data. (2) The analysis of the fit index of the measurement model with the empirical data, indicating that the measurement model, the clarity variable (CLA), the vision variable (VIS), and the recovery variable (RES) (3) Guidelines for developing the characteristics of school administrators in an era of global change, covering three aspects, are found in the following. As to clarity, administrators should develop modern management skills and processes that emphasize learning and clear communication, and use technology to increase organizational management efficiency with flexible strategies that are consistent with the long-term vision that can be adjusted and evaluated. In terms of vision, executives should promote a culture of openness to diverse opinions and support the use of innovation to solve problems creatively. They can then learn from mistakes through a feedback system to engage their staff and recognize the effects of change. They can use the SWOT Analysis as a strategic analysis tool to efficiently manage resources and provide opportunities for stakeholders to express their opinions in a safe atmosphere. In terms of resilience, executives should prepare for changing situations by supporting learning from challenges, viewing challenges as opportunities for learning and self-development, and conducting a risk analysis to prepare for potential situations.

Key words: Components and Indicators, School Administrators, Primary Schools, Special Areas, Southern Border Thailand

INTRODUCTION

The world has entered the 21st century, which is a time of rapid change and transformation. The causes are economic, social, technological, and environmental; resulting from the driving force of three main trends: (1) globalization unites societies around the world into a single, interconnected society that allows people to communicate or travel around the world in a very short period of time; (2) the Big Bang of Technology has developed rapidly, resulting in technological innovations in the world in a large and rapid manner; and (3) financialization drives the world, where money plays a greater role in the modern world and financial technology in almost every aspect, along with the development of a more digital format (Eu-Aphithon, 2017). The global coronavirus pandemic of 2019-2020 has caused society to prepare for

many things, starting with people's lives that have changed. It is said that organizations are adjusting their mindsets, behaviors, and ways of working to be more flexible (Mitphan, 2020). The events of the pandemic crisis have raised questions about various aspects of the education system that can turn this crisis into an educational opportunity. This opportunity results in the survival and adaptation of educational institutions. It becomes a major test in educational management that requires a change in mindset to be in line with the advent of the New Normal.

New Normal is a new way of life that is different from the past because something has affected the patterns and practices that people in society. These people have formerly been familiar with the usual and expected norms, and now are required to change to a new way under new and unfamiliar

standards. This new way of life consists of thinking, learning, communication, practice, and management leading to the creation of new inventions and new technologies. There is an adjustment of concepts, visions, and management methods (Phrombut, 2020). The VUCA World refers to a world that is changing rapidly. To develop the quality of organizations to keep up with the changes that occur, education is an important tool for reforming the country and developing people to prepare for modernity. Disruptive Technology affects the business sector. Artificial intelligence (AI) is used to replace them and can help people to adapt to live in a rapidly changing global society (Krea-ngam, 2021), including coping with the volatility that will occur.

VUCA World is an acronym for Volatility, Uncertainty, Complexity, and Ambiguity. It is a term used by the US military to refer to the situation during wars in Africa and Iraq. Later, it was used in business because the current economic environment is changing rapidly and is a challenge for leaders in organizations who must understand and adapt to the current political, economic, social, and environmental changes. The VUCA world is a world that everyone must inevitably face (Santipraphop, 2017). Executives must adapt to the current situation, select and analyze a huge amount of information, make quick decisions, see everything through from beginning to end, and be leaders who are aware of changes that are timely (Simachokedee, 2017). In the New Normal, organizational leaders must be able to lead change, create potential, improve capabilities, and develop employees to be ready for change and create new innovations, which is consistent with Paengrisarn (2018). New-era executives must develop themselves in many ways: be analytical thinkers, have vision, demonstrate determination, and become good examples.

Agile leaders have a significant impact on existing organizational culture, business processes, and overall organizational performance (Hallinger, 2011). In addition, agility emphasizes the ability to drive for good relationships among colleagues, empathize, and resolve conflicts in a way that benefits everyone involved (Joiner & Josephs, 2007). Additionally, shared responsibility and proactive agility increase, where agile leaders are expected to develop forward-thinking strategies to maximize efficiency (Brockbank, 1999). Further, they foster decision-making processes; and teamwork increases teachers' productivity, motivation, and performance, which helps achieve organizational goals (Lunenburg & Ornstein, 2021). School administrators are the most important mechanism and have the greatest influence on the development of an effective education system as well as the management of quality education. Therefore, they must have the knowledge, skills, and experience appropriate for the changes in current situations. Due to the problems spawned by rapid world changes, education is required as an important tool for reforming the country and developing people in order to prepare for the changes in those situations. In addition, the problem of unrest in Thailand's southern border provinces is a result of the differences among the people due to race, religion, identity, culture, attitudes, beliefs, and local behaviors.

Research from theory to empirical statistical data of components and indicators can use the research results as information for strategic planning and prioritizing the development of school administrators. This can maximize the benefits by improving and developing resources to prepare for the changes that occur.

Objectives

1. To study of the components and indicators of school administrators in the era of global change in primary schools in the special area of the southern border provinces.
2. To study the analysis of the components and indicators of educational administrators in the era of global change
3. To study the development guidelines for educational administrators in the era of global change

RESEARCH METHOD

This was a mixed methods study with an Exploratory Sequential Design. We divided the research process into three stages as follows:

1. We studied the components and indicators of school administrators in the era of global change within primary schools in special areas of Thailand's southern border provinces under the Office of the Basic Education Commission. The sample group consisted of 400 teachers who acted as heads of academic administration in primary schools found within special areas of these provinces. Data was analyzed using exploratory factor analysis techniques.
2. We studied the developmental approach for educational administrators in this era of global change. The research team will present details of each phase of the research results, including symbols and abbreviations used in data analysis. The researchers have therefore defined symbols for four components and 20 indicators for use in data analysis and in the research results presentation.
3. We analyzed the data, wrote the research report, and published the results.

RESULTS

The research results were summarized by the researchers according to the research objectives which are divided into two stages. The research results found that:

Components and Indicators of School Administrators

Exploratory Factor Analysis (EFA) was performed on the components and indicators of school administrators in the era of global change in primary schools. The data of the components was obtained from the research conceptual framework; and from the analysis and synthesis of concepts, theories and research, which show the following results:

1. Component 1, clarity, which is a component of clarity, has an eigenvalue of 47.879, and can explain the highest variance, which is 59.848 percent, with component weights ranging from .572 to .987.

2. Component 2, vision, has an eigenvalue of 3.127, and can explain the highest variance, which is 3.908 percent, with component weights ranging from .509 to .764.
3. The third component, recovery, has an eigenvalue of 2.074, which can explain the highest variance, which is 2.593 percent, with indicator weights ranging from .513 to .749.

Components and Indicators of Educational Administrators

First-order confirmatory factor analysis of the measurement model

Confirmatory Factor Analysis (CFA) has a chi-square value (χ^2) of 2.119, which is not statistically significant, with a p-value of .548. This has a degree of freedom of 3, a relative chi-square value (χ^2/df) of .706, and a Tucker and Lewis fit index (TLI) of 1.002. It also has a comparative fit index (CFI) of 1.000, a root mean square index of residuals (RMR) of .001, and a root mean square index of approximation error (RMSEA) of .000. The analysis results passed all measurement criteria.

The results of the analysis of the fit of the measurement model by each variable, considering the statistical values, found that the measurement model was consistent with the empirical data when compared to the criteria for measuring the level of fit of the measurement model with the empirical data. All statistics of all variables passed the criteria for the analysis of the fit index of the measurement model with the empirical data, indicating that the measurement model, the clarity variable (CLA), the vision variable (VIS), and the recovery variable (RES) were consistent with the empirical data. Also, it is feasible that all latent variables used in this study could be measured from indicators or observable variables that were appropriate.

The results of the first-order confirmatory factor analysis of the components and indicators of school administrators in the era of global change after adjustment found that the factor loading weights of the components and indicators of school administrators in all three components from the first-order confirmatory factor analysis (CFA) of the overall measurement model were consistent with the empirical data. The resultant values of $\chi^2 = 47.471$, $df = 36$, $\chi^2/df = 1.319$, $RMSEA = 0.040$, $CFI = 0.996$, $TLI = 0.994$, $RMR = 0.008$, indicate that the results of the analysis of the goodness of fit of the measurement model by variable were consistent with the empirical data and the results of the verification of the convergence of the validity. Validity of both the Factor loading Composite Reliability weight values were between 0.977 - 0.988, and Average Variance Extracted found that all latent variables had reliability values between $AVE = 0.934 - 0.943$ and were statistically significant at the .001 level. All values showed the results of the analysis of the standard component weights of the measurement model.

Second-order confirmatory factor analysis results of the measurement model

The second-order confirmatory factor analysis results were analyzed to confirm that the three components and indicators

of educational administrators, 11 indicators, and 44 questions from the second-order confirmatory factor analysis (CFA) of the measurement model were overall consistent with the empirical data, with values of $\chi^2 = 43.784$, $df = 27$, $\chi^2/df = 1.622$, $RMSEA = 0.056$, $CFI = 0.994$, $TLI = 0.988$, $RMR = 0.009$, $p = 0.022$. Although the p value showing significance did not meet the criteria for structural equation model analysis, it was acceptable because the chi-square test statistic will have a high value when the sample size is large, resulting in a statistically significant p value (Schumaker and Lomax, 2016). This indicates that all measurement models according to the research conceptual framework are consistent with the empirical data.

Development Guidelines for Educational Administrators

Clarity

1. Executives should be open to new information, and communicate clearly and quickly to adapt to the continuously changing environment.
2. Executives should set strategies that are consistent with the organization's long-term vision, and use technology as an important tool in management.
3. Executives should promote critical thinking and problem-solving by creating an organizational culture that encourages the expression of multiple perspectives and creative problem-solving.
4. Executives should prioritize and manage resources effectively, using tools such as SWOT Analysis to prioritize tasks and resources for maximum benefit.

Vision

1. Executives should set clear and flexible goals, have long-term plans that can be measured and adjusted according to the situation, and use technology to monitor and evaluate.
2. Executives should promote the use of innovation and change by creating an organizational culture that is open to innovation and the development of new methods to improve the quality of education.
3. Executives should create understanding and participate in improving the vision by giving personnel the opportunity to participate in continuously improving the organization's vision.

Recovery

1. Executives should create collaboration and learning from mistakes, giving all stakeholders an opportunity to exchange opinions and develop the organization in the same direction.
2. Executives should prepare for changing situations, create and develop backup plans, and use risk analysis to prepare for possible situations.
3. Executives should support learning from challenges, as well as encouraging employees to view challenges as opportunities to learn and develop themselves.

DISCUSSION

Research on the operational model of innovative school administration leading to the development of educational quality has the following issues to be discussed:

Components and Indicators of School Administrators

The results of the exploration component analysis (EFA), components and indicators of school administrators in the era of global change from the component data obtained from the conceptual framework, research obtained from the analysis and synthesis of concepts, theories and research results are as follows:

Clarity

Clarity can be explained by the development of performance indicators which lead to changes in the internal and external environment. This reflects the importance of management that emphasizes flexibility and transparency, and plays an important role in the organization's efficiency, especially in situations where it is faced with changes in the environment and organizational culture. It can be adjusted to suit external factors. By planning a clear strategy and using indicators that are consistent with long-term goals, it helps increase the organization's efficiency and capabilities, which is consistent with the concept of Kotter (1996). Kotter stated that successful adaptation to change must begin with the determination of clear measurable indicators, especially in the early stages of change. These indicators are an important tool in identifying successes or challenges that may arise in the change process. Similarly, Ferrante et al (2018) emphasized the importance of clear decision-making processes and criteria. Clarity in decision-making involves providing clear guidelines, frameworks, and accountability mechanisms to facilitate effective decision-making in ambiguous and rapidly changing situations. By clarifying the decision-making process in the organization, uncertainty can be reduced, and confidence can be increased in responding to challenges. As for strategic thinking, it consistently considers the long-term vision and goals of the organization, demonstrating the important role of strategic thinking in enhancing direction and clarity in organizational goals. This strategic thinking allows the organization to see the big picture clearly and make effective decisions.

The research of Smith (2020) emphasized the importance of having a clear strategy to deal with uncertainty. Strategic clarity enables effective plans and operational approaches, enabling organizations to make informed decisions and act purposefully to meet challenges. It ensures that everyone in the organization understands strategic goals, priorities, and the stages of necessary steps to achieve them. Communication and clarification are essential to present expectations and information. Consistent with the research of Goleman et al. (2013), the findings emphasize the importance of clear communication, especially in organizations facing rapid change. Executives with clarity can convey important information directly and create an atmosphere of

openness to feedback, which is the foundation for long-term organizational development. Similarly, Men (2021) emphasized the importance of clear and concise communication to avoid misunderstandings and increase clarity within the organization. Having transparent and open communication channels allows organizations to clearly communicate roles, responsibilities, and goals, ensuring that individuals and teams have a shared understanding of their work and objectives in a complex and rapidly changing environment.

Vision

Vision has four indicators and is rearranged into three indicators with 14 questions. The reason for this is that it can be explained that having a vision helps administrators to foresee and set goals that are consistent with changes that may occur in the future. Executives with vision will be able to plan strategically to respond to various challenges. Similarly, Brown et al. (2014) mentioned the importance of having a vision in the VUCA world (Volatility, Uncertainty, Complexity, Ambiguity). Further, administrators need to be able to analyze situations comprehensively in order to anticipate and prepare for changes. In addition, Doeze Jager-van Vliet et al. (2017) also stated that executives with vision can inspire and drive their teams effectively. This is consistent with Mombourquette (2017), who studied the role of vision in leading school management and found that leaders with a strong vision can motivate everyone in the organization to strive in the same direction for the development and improvement of quality teaching and learning. Vision creates shared understanding and serves as a guideline for developing strategies that are consistent with changes in the educational society. Hallinger (2011) also emphasized that school administrators who can create a clear vision, can effectively motivate teachers and school personnel to cooperate and achieve common goals.

Resilience

Resilience is a new element and has a new name. It can be explained that having resilience skills is important in a rapidly changing world. Executives must be able to cope with and recover quickly from unexpected situations and crises. Highly resilient executives can adapt and recover quickly after facing challenges. Rohrbeck et al. (2015) presented three essential skills for leaders in terms of resilience: (1) thinking skills enable optimism and understanding the situation; (2) capacity-building skills help to manage values, confidence, and relying on support bases; and (3) action skills require courageous decision-making, commitment, and adaptability. This resilient management ability is a factor that enables executives to adapt quickly and enhance long-term resilience. Similarly, Lemoine and Richardson (2019) studied current management and found that executives who are able to recover quickly from problems are able to lead organizations through crises effectively. In addition, resilience helps build confidence and reduce anxiety in the team, allowing the organization to recover quickly. Research by Rahimi and Choobineh (2024) indicates that participation

and transparency in communication between administrators, teachers, students, and communities can help increase resilience to crises and foster effective recovery. Listening to stakeholders can help generate informed and timely decisions.

Zainuddin et al. (2024) stated that stakeholder engagement is an important indicator reflecting the resilience of a school. Communication between administrators, teachers and the community promotes rapid recovery. Furthermore, Bănică et al. (2024) stated that rapid situation assessment is an important indicator supporting a proactive response in potential situations.

Components and Indicators of Educational Administrators

Factor-loading found that these components help enhance the management capabilities of administrators in a rapidly changing context, enabling them to effectively cope with challenges and changes in the educational environment.

For the clarity component, administrators must be clear in setting the organization's goals and directions. Clear and transparent communication helps personnel to correctly understand and comply. Research by Nguyen and Tran (2021) stated that clarity in leaders' communication results in higher team performance and reduces confusion in work. This is consistent with Charoen-Suk (2020), who studied entrepreneurial leadership in private educational institutions and found that clarity in goals and strategies help build team confidence and promote work towards achieving organizational goals. Sirisawat (2021) emphasized that clarity in work processes helps reduce ambiguity in educational institution management and helps increase the efficiency of personnel in educational institutions. In addition, Sangsawang (2018) also stated that clear communication from executives helps build trust in the organization, which is an important foundation for developing teams and students in educational institutions.

The vision component allows executives to see the long-term picture and set goals that are aligned with future changes. The component analysis shows that having a vision enhances strategic decision-making and motivates teams. Smith's (2020) research suggests that visionary leaders can inspire and motivate staff to work together towards a goal. Similarly, Panyasuk (2021) studied creative leadership in award-winning educational institutions and found that a clear vision promotes goal achievement and motivates staff within the organization. Thongkham (2018) emphasized that having a vision in technology enhances the management potential of executives in the digital age. Meanwhile, Chansawang (2021) pointed out that a vision that is aligned with the organization's long-term goals will enable leaders to create positive changes and address emerging challenges.

The resilience component is the ability to recover from difficult situations, which is another important trait for educational administrators. Resilience enables administrators to deal with problems and quickly get back on track. An analysis of the components found that resilience builds organizational resilience and increases team trust. As Brown et al.'s

(2019) research stated, resilient leaders can effectively lead organizations through crises. Similarly, Phongsak's (2019) research studied strategic leadership and found that the ability to recover from unexpected situations allows leaders to effectively cope with problems and plan new operations. This research reflects the importance of resilience linked to adaptability and flexibility in management. Resilience from failure helps build trust and resilience in the team. Breen's (2017) research shows that resilience is one of the most important traits that help leaders lead organizations through crises and adapt to rapidly changing environments. Similarly, Cavusgil et al.'s (2021) research emphasizes the development of leaders' decision-making abilities in crisis situations and stressed management, which are important factors affecting resilience.

Building support networks, such as joining local or national leadership groups, allows for the exchange of ideas and approaches to problem-solving in different situations. This is consistent with research by the Institute for Teacher Development, which suggests that resilience is one of the key drivers of management effectiveness in today's era, especially in contexts where rapid change in operating models is required. In addition, research by Lemoine and Richardson (2019) found that organizations that support learning and skills development enhance leaders' resilience. Training and providing leaders with opportunities to adapt to a variety of situations helps build readiness to deal with future complexity.

The understanding component refers to understanding the diverse context and needs of the people. It enables executives to plan and make effective decisions. The analysis of this component shows that understanding plays a key role in building cooperation and trust in the team. For example, the research of Lee and Kim (2018) indicates that leaders who understand the organizational culture and needs of their people can effectively improve the performance of the organization. Similarly, Shepherd, Fowler and McCormick, (2016) stated that leaders with understanding will reduce ambiguity and increase cooperation within the team. Chin et al. (2016) pointed out the importance of management that considers diversity and understanding the context of the people in the organization in order to create a leadership approach that is inclusive of diversity. Consistent with Goleman et al., (2013), he explained the importance of developing organizational understanding so that executives can create an environment conducive to collaboration. A good understanding of the current situation and future directions is an important factor that supports quality decision-making. In terms of the adaptability component, adaptability is something that executives need to be able to cope with the uncertainty in today's world. Flexible executives will be able to adjust strategies and working methods according to the needs of a situation.

The New Normal that occurred during the COVID-19 crisis, must be embraced by school administrators who are considered to be those who have to manage education under a new way of life. This new way is different from the past due to the environment of the COVID-19 pandemic, causing people's lifestyles in society to change to a new way of life,

such as social distancing, wearing masks, and increasingly taking care of their own health and hygiene. School administrators must therefore perform a role that is ready to cope with changes in the situation, including educational management that is consistent with the new way of life. These changes might involve preparing for online teaching via various electronic devices, creating interesting teaching media that is mindful of current education, and managing teaching and learning to be modern and effective. Joint planning is required from administrators, lecturers, and educational personnel to manage teaching and learning to demonstrate quality and be consistent with the study results of Zerrin Önen (2023). The findings show that administrators mainly carry out technical work and operations related to the smooth execution of remote learning during the COVID-19 process. It also reveals that the majority of administrators are successful in technical competencies that include knowledge and skills related to their field of expertise. Based on the research findings, it can be said that both in the COVID-19 process and in the post-COVID-19 process, administrators should improve themselves not only in technical competencies, but also in humane and conceptual competencies. They should also have information, technology and emotional literacy skills. Further conclusions and implications were also discussed.

Development of School Administrators' Characteristics

The research results found that the development of school administrators' characteristics in the era of global change in primary schools in all three areas are as follows:

Clarity

Educational administrators should be open to new information, communicate clearly and quickly to adapt to the continuously changing environment. Strategies should be set that are consistent with the organization's long-term vision, use technology as an important tool in management, and promote critical thinking and problem-solving by creating an organizational culture that promotes multi-perspective expression and creative problem-solving. To prioritize and manage resources effectively, they must use SWOT Analysis tools to prioritize tasks and resources for maximum benefit. This is consistent with Kanchanamani et al. (2022) who stated that educational administrators in the changing world should continuously adapt, be aware of changes, develop themselves to be excellent leaders, modernize the organization, and develop a team that has a learning mentality. They should use science and art in organizational management, have high leadership skills, guide ideas into concrete actions, and encourage teachers to use technology and innovation in learning management.

Vision

Executives should set clear and flexible goals, have a long-term plan that can be measured and improved according to the situation, and use technology to monitor and evaluate. The use of innovation and change should be promoted by

creating an organizational culture that is open to innovation and the development of new methods to improve the quality of education. There should be understanding and participate in improving the vision by allowing personnel to be involved in continuously improving the organization's vision. This is consistent with Kanchanamani et al. (2022) who stated that educational institution administrators should act to create a vision for the success of the organization, understand the organization's strengths, weaknesses, capabilities and strategies; analyze risks and manage risks, and be able to create a clear picture of the future of the educational institution. Creating clarity in policies and strategies is another important approach to make timely decisions, be flexible, and adapt to the rapidly changing environment. It will be able to cope with emergency situations while still maintaining the organization's goals and vision.

Recovery

Executives should promote collaboration and learning from mistakes, provide opportunities for all stakeholders to exchange opinions, and develop the organization in the same direction. They should prepare for changing situations, create and develop backup plans, and use risk analysis to prepare for possible situations. There should be support for learning from challenges, and encouraging personnel to view challenges as opportunities to learn and develop themselves. This is consistent with Kanchanamani et al. (2022) who stated that educational administrators must adjust their work styles in the new era to be appropriate, use the right people for the job, and be true leaders. They must adjust their attitudes and skills, learn continuously, be open-minded, and accept potential failures. They must always seek new methods and be able to handle emergency situations. Finding new methods involves risks and opportunities for mistakes. At the same time, if executives do not allow new things to happen, the organization will not be able to progress beyond the current situation.

CONCLUSION

In conclusion, this research can be used as a guideline for education management in the current situation. Educational institutions have a duty to develop learners in terms of core subjects and 21st century skills, which include learning and innovation skills, life and career skills, and information and technology skills. The role of school administrators is therefore an important responsibility for effective education management. Administrators must be aware of changes, develop themselves to be excellent leaders, modernize the organization, develop teams with learner mentalities, develop new paradigms in the organization, and drive new management strategies that have a positive effect on school administration.

REFERENCES

- Bănică, A., Țigănașu, R., & Nijkamp, P. (2024). Institutional quality in green and digital transition of EU regions—A recovery and resilience analysis. *Global Challenges*, 8(9), Article 2400031. <https://doi.org/10.1002/gch2.202400031>.

- Breen, J. M. (2017). *Leadership resilience in a VUCA world: Thriving in the new VUCA context*. Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78714-242-820171003>
- Brockbank, W. (1999). If HR were really strategically proactive: Present and future directions in HR's contribution to competitive advantage. *Human Resources Management*, 38(4), 337-352.
- Brown, A., Smith, J., & Williams, L. (2019). Leadership resilience in times of crisis. *Journal of Leadership Studies*, 13(2), 45-56.
- Cavusgil, S. T., Deligonul, S., & Zhang, C. (2021). Building resilience for surviving and thriving in a VUCA context. *AIB Insights*, 21(2). <https://doi.org/10.46697/001c.22183>.
- Chansawang, P. (2021). Confirmatory Factor Analysis of 21st Century Leadership of School Administrators. *Journal of Educational Research and Development*, 18(4), 121-139.
- Charoensuk, S. (2020). Entrepreneurial Leadership in Private Educational Institutions. *Journal of Educational Innovation*, 6(1), 97-112.
- Chin, J. L., & Sawyer, K. (2016). Making way for paradigms of diversity leadership. *Consulting Psychology Journal: Practice and Research*, 68(1), 49 - 72.
- Doeze Jager-van Vliet, S., Born, M., & Van der Molen, H. (2017). Self-other agreement between employees on their need for achievement, power, and affiliation: A social relations study. *Scandinavian Journal of Work, Environment and Health*, 2(9), 1-12.
- Eu-Aphithon, T. (2017). *How will humans create new skills and learning to cope with future changes*. <https://the-standard.co/learning-for-change/>.
- Ferrante, C. J., Selzer, R. A., Friesen, G. B., & Zimmerman, R. D. (2018). Building strategic decision clarity: The importance of a decision clarity framework. *Journal of Business Strategy*, 39(4), 41-47.
- Goleman, D., Boyatzis, R. E., & McKee, A. (2013). Primal leadership: Unleashing the power of emotional intelligence. *School Leadership & Management*, 30(2), 95-110.
- Hallinger, P. (2011). Leadership for learning: Lessons from 40 years of empirical research. *Journal of Educational Administration*, 49(2), 125-142.
- Joiner, B., & Josephs, S. (2007). Developing agile leaders. *Industrial and commercial training*, 39(1), 35-42.
- Kanchanamani, S., Waichomphu, N., & Phromsri, T. (2023). Adaptation of educational administrators in the era of global change. *Eastern Asia University Journal of Social Sciences and Humanities*, 13(1), 1 - 13.
- Kotter, J. P. (1996). *Why transformation efforts fail*. Harvard business review.
- Krea-ngam, W. (2021). *KICKOFF! Thai children 2025 for the Thai economy*. Retrieved February 23, 2022, from <http://www.onec.go.th/th.php/page/view/Newssecgen/4682>.
- Lee, H., & Kim, S. (2018). Understanding organizational culture for effective leadership. *International Journal of Business Management*, 13(1), 23-34.
- Lemoine, P. A., & Richardson, M. D. (2019). *Global higher education in a VUCA world: Concerns and projections*. Florida International University. <https://doi.org/10.25148/SFERC-2019.001>.
- Lunenburg, A. C. O. (2021). The role of educational administrators in the borderless era. *Journal of Mahachulalongkornrajavidyalaya University, Roi Et Campus*, 6(2), 206 - 215.
- Mangahas, A. M. E. (2017). Perceptions of high school biology teachers in Christian schools on relationships between religious beliefs and teaching evolution. *Journal of research on christian education*, 26(1), 24 - 43.
- Men, L. R. (2021). Internal communication during the COVID-19 pandemic: Sensemaking, ambiguity, and turnover intention. *International Journal of Business Communication*, 58(2), 123-147.
- Mitphan, C. (2020). *Adjusting your lifestyle to accept the New Normal after the COVID-19 crisis*. Retrieved February 23, 2022, from <https://www.etda.or.th/content/new-normal-after-covid-19.html>.
- Mombourquette, C. (2017). The role of vision in effective school leadership. *International Studies in Educational Leadership*, 45(1), 23-35 <https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=13241702&AN=126378979>.
- Nguyen, T. H., & Tran, P. V. (2021). Developing leadership competencies in the disruptive era. *International Journal of Leadership Development*, 35(2), 78 - 95.
- Phrombut, S. (2020). *New normal with a changing way of life*. Retrieved June 28, 2022. From <https://dsp.dip.go.th/th/category/2017-11-27-08-04-02/2020-06-29-14-39-49>.
- Paengsrisarn, B. (2018). Characteristics of educational administrators in the new century. *Journal of MCU Nan Review*, 2(2), 131-141.
- Panyasuk, S. (2021). Analysis of the components confirming creative leadership in educational institutions that received royal awards. *Journal of Educational Administration and Development*, 17(3), 89-105.
- Phongsak, A. (2019). Analysis of confirmatory components of strategic leadership in the 21st century of educational administrators. *Journal of Educational Innovation*, 12(1), 54-72.
- Rohrbeck, R., Battistella, C., & Huizingh, E. (2015). Corporate foresight: An emerging field with a rich tradition. *Technological Forecasting and Social Change*, 1(101), 1 - 9.
- Rahimi, L., & Choobineh, M. (2024). Measurement and evaluation of social resilience indicators in the historical neighborhoods of Tabriz city: Case Study. Sorkhab Neighborhood of Tabriz. Retrieved from https://sppl.ui.ac.ir/article_28228_en.html
- Saengsawang, P. (2018). Administrative communication in educational institutions. *Journal of Administration and Development*, 9(1), 85-95.
- Santipraphob, V. (2017). *Challenges of the Thai economy in a VUCA world*. Retrieved February 23, 2022, from <https://www.the101.world/veerathai-santiprabhob>
- Schumacker, R.E., & Lomax, R.G. (2016). *A Beginner's Guide to Structural Equation Modeling*. Routledge.

- Simachokedee, W. (2017). *The negative effects on organizations in the VUCA World era*. Retrieved February 23, 2022, from https://www.matichon.co.th/columnists/news_567047.
- Sirisawat, C. (2021). Confirmatory Factor Analysis of Leadership in Educational Institutions. *Journal of Educational Administration*, 13(2), 55 - 71.
- Smith, R. (2020). Visionary leadership and organizational success. *Journal of Management Research*, 22(3), 112 - 125.
- Thongkham, N. (2018). Confirmatory Factor Analysis of Technological Leadership of School Administrators. *Academic Journal*, 14(2), 65-78.
- Zainuddin, Z., Kissinger, K., Kadir, S., & Badaruddin, B. (2024). The role of local government in disaster risk reduction: Increasing the regional disaster resilience index. *Jurnal Ilmiah Bidang Pengelolaan Sumberdaya Alam Dan Lingkungan*, 20(1), 65-78. <https://ppjp.ulm.ac.id/journal/index.php/es/article/view/18889>
- Zerrin Önen, K. (2023). Teachers' Opinions on the Competencies of School Administrators During COVID-19 Outbreak Fatma. *International Journal of Education & Literacy Studies*, 11(1), 92. <http://dx.doi.org/10.7575/aiac.ijels.v.11n.1p.92>.