Strategic Adaptive Leadership Development of Administrators of Eastern Vocational Education Institutions toward Excellence: A Focus on Thailand's Vocational Education Management 4.0 Policy

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Abstract

This research aimed to (1) identify the characteristics of strategic adaptive leadership development of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's vocational education management 4.0 policy, (2) analyze the elements of strategic adaptive leadership of administrators of eastern vocational education institutions, and (3) propose a guideline for the development of strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in vocational education management. The researchers used (1) documentary analysis, (2) empirical data from 15 successful administrators' in-depth interviews, and (3) a questionnaire on three aspects of strategic adaptive leadership: (i) personal characteristics, (ii) work developed toward excellence, and (iii) personnel development and adaptation to the new normal. The data were collected from a sample of 622 persons--executives and personnel of vocational education institutions in Eastern Thailand. The obtained data were analyzed by exploratory factor analysis, tested by data triangulation methodology technique, and confirmation of a guideline drafted by the connoisseurship approach. The research results indicated that the strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence contained nine elements: (1) charisma leadership and inspirational motivation, (2) individualized consideration and working as a team, (3) creating an innovative educational organization, (4) adaptive strategy and challenges, (5) building a positive corporate culture, (6) creating a creative corporate atmosphere and shared values,

(7) innovative leadership maturity, (8) mindset modification and intellectual stimulation, and (9) digital skills development toward excellence. The findings were expected to guide the adaptive leadership development of executive competencies in the nine dimensions to achieve excellence in vocational education management as stated in the 4.0 Policy of Thailand.

1. Introduction

The mission of Thailand's vocational education institutes is to provide vocational training for students with the competencies needed in the 21 Century. It emphasizes technical and technological standards to meet the needs of the country's development following the 20-year national strategy plan. Administrators and teachers are key drivers of the desired reform. Academic development and quality behavior change offer opportunities for collaborative discussions with learners for time spent on extracurricular activities, knowledge for self-improvement, and teaching to its full potential. Building a learning society requires appropriate and effective learning materials created by vocational innovative institutions in accordance with Thailand's Vocational Education Management 4.0 Policy. Furthermore, the institute's performance report should be continuously monitored at all stages (Office of the Vocational Education Commission, 2019). Therefore, academic administration and vocational practice are at the heart of the strategically planned development. Vocational education institutions are decentralized in curriculum development, teaching and learning process, student development activities, measuring and evaluating, and creating media and learning resources. To ensure that learners' quality aligns with the standard qualification framework, administrators need a systematic and clear implementation plan. The Office of the Vocational Education Commission (2019) has established a focus on quality development as a guideline for driving the curriculum and learning management, including measuring and evaluating tools for learners. An efficient executive or leader must have good knowledge, abilities and attributes, be able to motivate, promote, support and lead teachers to achieve their goals. As known, educational institution administrators' leadership is related to learners' academic achievement, and modern leaders can realize the desired reform. Leaders who do not have a clear understanding of educational quality in concrete terms can take the organization into a wrong direction and subsequent failure (Phakamach et al., 2022).

Currently, the era of educational disruption caused by the COVID-19 pandemic has profound impacts on educational organizations' operations management in both the national and international competitions (Mukaram et al., 2021). The next normal requires a specific model or method of management to maintain the quality of education and minimize its impact on teaching and learning. However, in real-world situations, vocational school administrators will encounter many obstacles in achieving their goals on the performance of learners by the standards and skills of the 21st century. In this regard, leaders need to change the direction of thinking and management to keep pace with inevitable changes, especially in digital education, where a complete strategic plan covering the organization's operations is required for organizational restructuring and implementation (Saengkaew et al., 2021). Important issues include human resource management, educational innovation, online education management, and strategic control and evaluation--all integrated into a strategic management model for vocational institutions. Leaders need to handle the strategic management of vocational institutions in five stages: (1) strategic formulation, (2) strategic analysis, (3) strategic planning, (4) implementation of strategies, and (5) strategic control and evaluation (Phakamach et al., 2022).

When the socioeconomic environment changes, organizations must adapt to survive. Phakamach et al. (2021a) argued that modern education executives need to use leadership appropriately to build relationships with personnel to reach the common goals of the organization. They can influence individuals or groups of people by building trust in the first place. With confidence in work performance and supportive environment, leaders can prompt cooperation from their staff in assigned duties. In the case of the COVID-19 pandemic, leaders need to work like change agents in helping their followers to look for ways to do things differently. Such major changes in education, especially vocational education, require both instructors and learners to adapt to online learning and necessary digital practices (Yıldırım et al., 2021). This could also be an opportunity to reshape their strategic planning in educational management. Those required changes might need to review the concept and direction of educational development to suit their particular context. This will benefit their management operations as well as enhance the teaching-learning quality as a whole (Phakamach et al., 2022).

Strategic adaptive leadership of vocational education institutes is for executives to strive for excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The research team of the present study would like to identify the characteristics and elements in order to be able to provide a guideline for strategic adaptive leadership development for the

administrators of vocational education institutions in the east toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The obtained findings can be used for training of desired competencies of adaptive leaders in the areas of planning, budget allocation, human resource development, new strategy development, and personnel collaboration. The Office of the Vocational Education Commission (2019) has always focused on developing executives' potential following Thailand's 4.0 Policy regarding technical and soft skills necessary for careers and surviving in a rapidly changing society. This is to enable vocational education executives and related parties in the digital age to ensure quality and efficiency in the framework of the Vocational Education Standards B.E. 2562/ 2019, Human Capital Development stated in the 20-year National Strategy 2018-2037 and the National Education Plan 2017-2036.
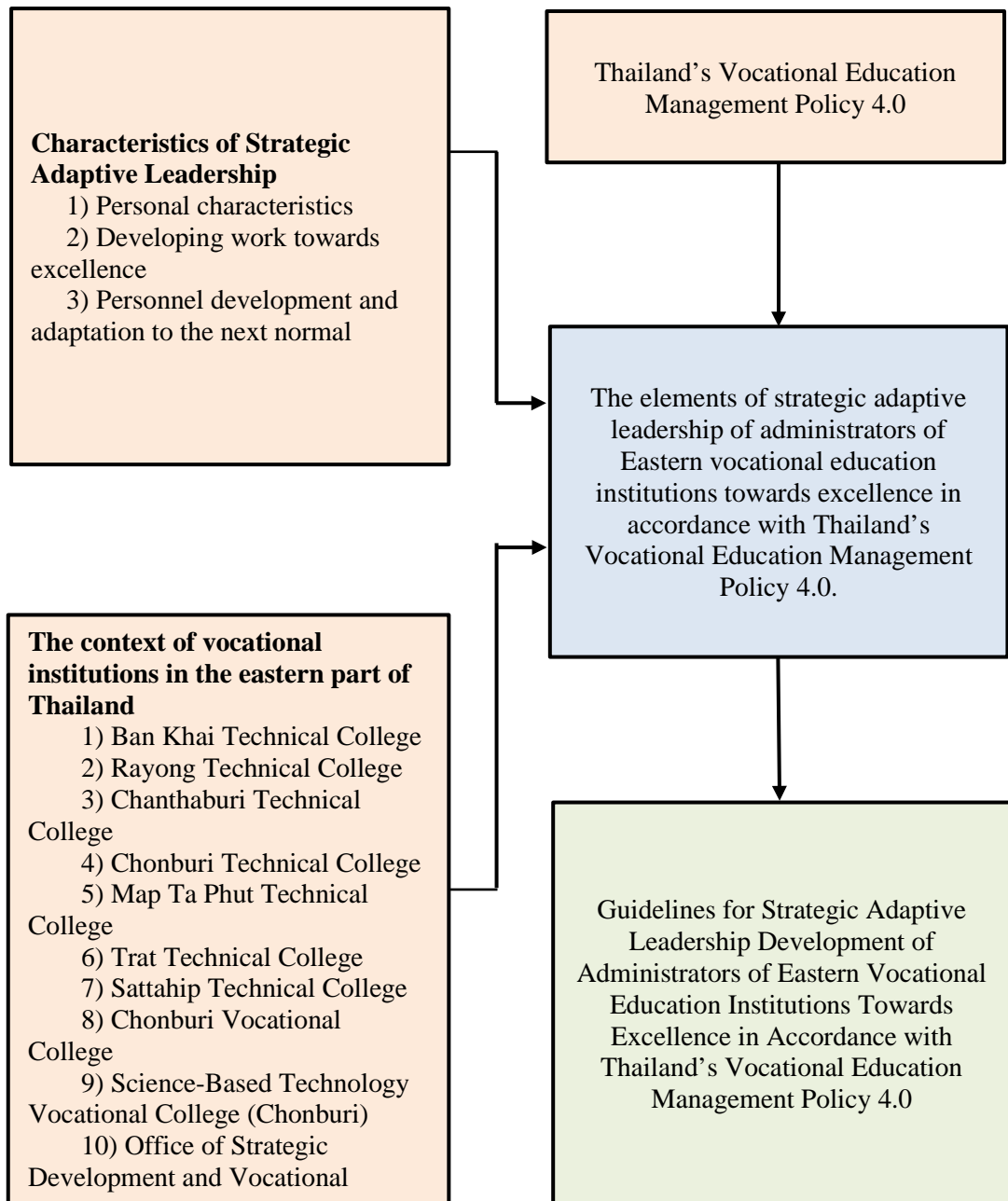
2. Research Objectives

The study had three research objectives:

1. To identify the characteristics of strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy.

2. To analyze the elements of strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy.

3. To propose a guideline for the development of strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy.

3. Research Conceptual Framework

Based on literature review, documents, and related research, the research team developed a conceptual framework as shown in Figure 1.

Figure 1: Research Conceptual Framework

Characteristics of Strategic Adaptive Leadership
    1) Personal characteristics
    2) Developing work towards excellence
    3) Personnel development and adaptation to the next normal

Thailand's Vocational Education Management Policy 4.0

The elements of strategic adaptive leadership of administrators of Eastern vocational education institutions towards excellence in accordance with Thailand's Vocational Education Management Policy 4.0.

The context of vocational institutions in the eastern part of Thailand
    1) Ban Khai Technical College
    2) Rayong Technical College
    3) Chanthaburi Technical College
    4) Chonburi Technical College
    5) Map Ta Phut Technical College
    6) Trat Technical College
    7) Sattahip Technical College
    8) Chonburi Vocational College
    9) Science-Based Technology Vocational College (Chonburi)
    10) Office of Strategic Development and Vocational

Guidelines for Strategic Adaptive Leadership Development of Administrators of Eastern Vocational Education Institutions Towards Excellence in Accordance with Thailand's Vocational Education Management Policy 4.0

4. Research Methodology

        This research used both quantitative and qualitative research with the details as follows:

4.1 Population and Samples

(1) The population included teachers and educational personnel of vocational education institutions in Thailand's eastern region. For the academic year 2022, 1,487 students from 9 institutions in 4 eastern provinces--Chonburi, Rayong, Chanthaburi and Trat.

(2) The sample included teachers and educational personnel in 9 vocational education institutions. The size was determined by Taro Yamane's formula for calculating the number of participants. The researchers also used the proportional method and the simple random sampling method to obtain a sample of 622 people. As for the interview data on executives of vocational education institutions in the eastern region, the size of the sample was determined by the snowball sampling selection method. The researchers approached 15 experts in vocational and technical education administration by convenience sampling, according to the specified qualifications: (i) current or former executives at the director level in public and private vocational institutions, (ii) with experience in managing public and private vocational institutions for at least 3 years, and (iii) success records in educational organizations development.

4.2 Research Instruments

The quantitative tool used in this research was a five-level rating scale questionnaire based on Likert's methodology in three parts: personal characteristics, work development toward excellence, and human resource development and adaptation. The criteria for scoring were:

Strongly agree: Score 5
Agree: Score 4
Neutral: Score 3
Disagree: Score 2
Strongly disagree: Score 1

The researchers used a semi-structure interview guide which was tested in structure and content by three experts. The guide carried a conformity index of .5 or higher, an IOC value of .902, and piloted with 30 non-sample vocational school executives. The final version had Cronbach's Alpha Coefficient at .927.

4.3 Data Collection

The researchers collected both quantitative and qualitative data between October and December 2022. The qualitative interview data were obtained from fifteen experts and the quantitative data were collected online at 622 copies or 100% returned.

4.4 Data Analysis and Synthesis

The obtained qualitative data were analyzed by content with classified specifications, while the quantitative responses to the questionnaire were analyzed by Social Science Statistical Programs for percentage, mean, and standard deviation. The tool was used to secure the elements of strategic adaptive leadership of administrators of Eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The 5-level estimation scale with numerical values used as criteria for consideration: Level 5 = Strongly Agree, Level 4 = Agree, Level 3 = Neutral, Level 2 = Disagree and Level 1 = Strongly Disagree.

An average score of 4.50 - 5.00: Practicality at the Strongly Agree level.

An average score of 3.50 - 4.49: Practicality at the Agree level.

An average score of 2.50 - 3.49: Practicality at the Neutral level.

An average score of 1.50 - 2.49: Practicality at the Disagree level.

An average score of 1.00 - 1.49: Practicality at the Strongly Disagree level.

The scores as such were for the interpretation of the obtained results for conclusion and discussion.

4.5 Research Procedure

The research procedure was in four stages as follows:

Step 1: Study of the characteristics of strategic adaptive leadership of administrators of Eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy, in the aspects of (i) theoretical concepts from relevant documents, textbooks, and research on leadership and strategic adaptive leadership of vocational education institute executives; and (ii) in-depth interviews of 15 vocational institute executives regarding their successful performance on managing vocational education institutions.

Step 2: Analysis of the elements of strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The researchers used the results from step 1 to create a questionnaire with an estimated scale and submitted the participants' responses for Exploratory Factor Analysis (EFA).

Step 3: Data triangulation was performed on the obtained data in steps 1 and 2 to determine whether they were similar, different or consistent to conclude the characteristics and elements of strategic adaptive leadership used by the vocational education executives under study.

Step 4: Presentation of strategic adaptive leadership of administrators of eastern vocational education institutions via a seminar among fifteen experts in vocational and technical education management for their reaction to the data obtained in step 3 to determine the appropriate approach to the strategic adaptive leadership development of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy.

5. Results

The researchers reported the obtained results by three research objectives on the identified characteristics and elements of strategic adaptive leadership development, followed by a proposed guideline to strategic adaptive leadership development for vocational education administrators for excellence as prescribed by Thailand's 4.0 Policy.

5.1 Characteristics of Strategic Adaptive Leadership

Based on the findings on research objective 1, there were characteristics of strategic adaptive leadership management as follows:

(1) *Personal characteristics* include proactive, high expectations for job achievement and commitment to completion, flexible adaptation to the situation with a broad vision, creativity, action with dignity, and a democratic viewpoint. It is important to make decisions based on cause-and-effect reasoning, have good human relations, fairness and morality and ethics, academic and research knowledge in coping with the world's changing situation. The teaching and learning arrangements include the appropriate use of educational materials, technologies and innovations, and willingness to invent and experiment with new teaching techniques.

(2) Strategic adaptive leadership development consists of goal setting of education management for excellence in accordance with Thailand's Vocational Education Management 4.0 Policy with an emphasis on the participation of all parties concerned—analysis of current conditions, opportunities, and obstacles that correspond with real-world situations. Vocational education adaptive leaders need to develop clear systems and structures, supervise operations accordingly, promote teamwork by involving stakeholders in thinking and doing, hold regularly meetings with the staff for creative academic work, conduct research, and create innovations in vocational education for excellence in vocational education development at the national level.

(3) Adaptive leaders aim at the new normal by preparing personnel with knowledge and ability to adjust teaching and learning through various methods, such as conferences, seminars, webinars, and training programs for the faculty's interests. Other adjustments include classroom research, innovations in new teaching methods, activities or exhibitions for the faculty to disseminate academic works in various ways to reach desired academic communities. Teachers should be encouraged and advised in academic and research work in support of their professional advancement.

5.2 Elements of Strategic Adaptive Leadership

The researchers found nine elements of the strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The results of the analysis of the exploratory elements from empirical data revealed that the strategic adaptive leadership management of vocational education administrators carried nine elements with a total of 108 indicators. These elements accounted for 83.69%, as displayed in Table 1.

Table 1: Nine Elements of the Strategic Adaptive Leadership Management of Vocational Education Administrators in the East of Thailand

Elements	Element names	Number of items	Eigen Value	Percentage of variance
1.	Charisma Leadership and Inspirational Motivation	16	16.767	22.446
2.	Individualized Consideration and Working as a Team	15	15.532	17.009
3.	Adaptive Strategy and Challenges	14	13.245	11.212
4.	Creating an Innovative Educational Organization	13	11.198	9.004
5.	Building a Positive Corporate Culture	12	9.502	7.372
6.	Creating a Creative Corporate Atmosphere and Shared Values)	11	7.014	6.415
7.	Innovative Leadership Maturity	10	5.761	5.002
8.	Mindset Modification and Intellectual Stimulation	9	4.102	3.037
9.	Digital Skills Development toward Excellence	8	3.729	2.202
Total				**83.69**

(1) *Charisma Leadership and Inspirational Motivation* means that the leader behaves as an example to his/her followers and is willing to see the work's value and challenges in the organization's best interest. There are 16 components: (i) be stable and in self-control, (ii) be creative and listen to other people's opinions, (iii) be committed and dedicated to accomplishing tasks, (iv) adhere to creative ideas, (v) be a leader of change, (vi) be flexible by adapting to situations and solving problems promptly, (vii) be respectful and do not place themselves above others, (viii) behave like friends and be friendly to colleagues, (ix) be kind, helpful, and caring for the suffering of colleagues, (x) behave as a role model, (xi) be a knowledgeable and academic leader, (xii) have positive thinking and practice skills, (xiii) have good moral and ethical relations with the general public, (xiv) be fair and trustworthy, (xv) take into account academic and professional standards, and (xvi) create positive thinking and enthusiasm for colleagues.

(2) *Individualized Consideration and Working as a Team* refers to the leader's respect to individual differences and teamwork. There are 15 elements: (i) building good relationships, (ii) providing opportunities for people to learn new things, (iii) creating an atmosphere of support and promoting academic work, (iv) assigning tasks according to the potential of followers, (v) honoring others and acting with equality, (vi) empowering individuals to learn new things as needed, (vii) planning work with the interests of colleagues and organizations in mind, (viii) building commitments within the organization, (ix) promoting two-way communication, (x) mentoring constructively, (xi) creating values and challenges by encouraging teamwork, (xii) bringing followers to experience the beauty of the future, (xiii) creating and conveying what leaders aim, (xiv) expressing commitment to common goals and visions, and (xv) encouraging positive collaborators and positive imagination throughout the organization.

(3) *Adaptive Strategy and Challenges* means that leaders can combine their knowledge, skills, experience and creative ideas with their management strategies to create quality and competitive advantage. There are 14 components in this area: (i) having a strategic ability to solve problems and make decisions, (ii) using educational innovations to develop vocational education, (iii) acting as a good role model, (iv) having a progressive way of thinking both in-depth and broad, (v) having timely knowledge and solving specific problems, (vi) having the courage to innovate new and different ideas, (vii) having modern teaching and learning techniques, (viii) being open to experience in the preparation of future vocational courses, (ix) being well-tuned in strategic management, (x) understanding the principles of change

management and applying them for good, (xi) adjusting management styles according to changing contexts, (xii) being able to adapt oneself to changing educational situations, (xiii) implementing strategies that are appropriate to the situation, and (xiv) being able to adapt to society and the nation.

(4) *Creating an Innovative Educational Organization* refers to a model of innovation that allows an organization to exist under the conditions of change and development of innovations at the vocational level. There are 13 elements in this area: (i) understanding the patterns and practices that facilitate innovation, (ii) defining the appropriate innovation organizational structure, (iii) creating an organizational culture that supports innovation in all dimensions, (iv) defining the vision and strategy that will lead to an innovative organization, (v) defining the right hardware, software, and digital platform structure, (vi) creating a leadership team that strives to be a systematic innovation organization, (vii) developing a team with educational innovation habits, (viii) create an atmosphere and innovation ecosystem with a unique identity, (ix) creating effective knowledge management innovations, (x) supporting people to be creative and exchange learning freely, (xi) creating new options and career development in the digital age, (xii) aiming at an organization of excellence innovation, and (xiii) inspiring learning throughout the organization.

(5) *Building a Positive Corporate Culture* refers to the importance of the right-thinking process in the current management and readiness to support the organization's development into a competitive future. There are 12 elements in this area: (i) establishing good performance standards, (ii) establishing an organizational structure that is appropriate for the situation, (iii) establishing practical regulations, (iv) building collaborations in the team, (v) creating a teamwork system, (vi) supporting and motivating good intentions, (vii) creating positive awareness throughout the organization, (viii) creating a system of mutual acceptance, (ix) creating a system of commitment to the organization, (x) showing responsibility when things go wrong, (xi) creating sustainable value for the organization, and (xii) building loyalty to the organization.

(6) *Creating a Creative Corporate Atmosphere and Shared Values* means that leaders create a positive corporate atmosphere and look for opportunities to be ready to adapt and be sensitive to all kinds of changes and risks. There are 11 elements in this area: (i) creating unity in the organization, (ii) creating an atmosphere of exchange of learning, (iii) being an academic and professional role model, (iv) leading a learning organization, (v) having a constructive academic and research circle, (vi) encouraging and facilitating learning at all times, (vii) diligently attending academic seminars at both

national and international levels, (viiii) allowing colleagues to choose the right approach and take action with potential, (ix) creating an atmosphere of harmony, (x) cultivating creative shared values throughout the organization, and (xi) encouraging people to feel successful and achieving leadership at all levels to lead to a lifelong learning organization.

(7) *Innovative Leadership Maturity* means that leaders always have ideas and practices for innovation in education. There are 10 components in this area: (i) having an innovative leadership personality and skills, (ii) leading the development and dissemination of educational innovations, (iii) being a good role model for innovation, (iv) understanding the process of creating and developing educational innovations, (v) promoting the development of new educational technologies and innovations, (vi) creating an atmosphere of lifelong learning, (vii) creating an innovation ecosystem and aiming for an organization of educational innovation, (viii) setting the direction and enabling continuous and sustainable innovation, (ix) creating powerful leadership communication, and (x) developing the competencies of educational innovations to serve learners effectively.

(8) *Mindset Modification and Intellectual Stimulation* refers to a leader who makes followers alert to change by being aware of problems and how to solve them tactfully. There are 9 components: (i) having knowledge management process for the benefit of developing students' skills, (ii) being well-versed and aware of academic work, (iii) having the ability to mentor others, (iv) having the ability to use media, innovation, and modern technology, (v) being able to create systematic performance reports, (vi) having knowledge and understanding of techniques and methods of teaching both offline and online, (vii) understanding their potential by learning new teaching methods and experimenting in practice, (viii) being up-to-date and able to solve specific problems promptly, and (ix) promoting the development of new ideas to keep up with the world.

(9) *Digital Skills Development toward Excellence* refers to how leaders make followers aware of the development of digital skills, skills that must be learned and understood in the age of digital transformation in order to strive for excellence. There are 8 components in this area: (i) having applied thinking and adapting to all situations, (ii) being able to adapt to the new media phenomenon, (iii) learning and understanding a variety of sciences, (iv) having the ability to negotiate to deal with problems, (v) having knowledge and understanding of rational and emotional thinking, (vi) having knowledge and understanding of complex problem-solving skills, (vii) having the ability to innovate, always

developing digital skills, and (viii) striving for excellence throughout the organization.

5.3 Guideline to Strategic Adaptive Leadership

Based on the obtained results, the researchers proposed a guideline to strategic adaptive leadership development of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The obtained results from the participants combined with the data from the experts in triangulation pointed to the following as a guideline:

(1) There are five ways to develop executive strategic adaptive leadership: self-development and exemplary practice development activities including the exchange of learning, model-based education, and experiential learning.

(2) The strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy can utilize the PIER process consisting of (i) Planning (P), (ii) Implement (I), (iii) Evaluation (E), and (iv) Reflection (R). These are for improvement of thinking patterns and methods, and planning for the next phase of development

(3) Success factors in the strategic adaptive leadership of administrators of eastern vocational education institutions towards excellence in accordance with Thailand's Vocational Education Management 4.0 Policy include adaptive leadership development courses, support for adaptive leadership development resources, continuous and systematic monitoring and evaluation, followed by national and international leadership development networks.

6. Conclusion and Discussion of the Results

The findings were concluded and discussed in this section.
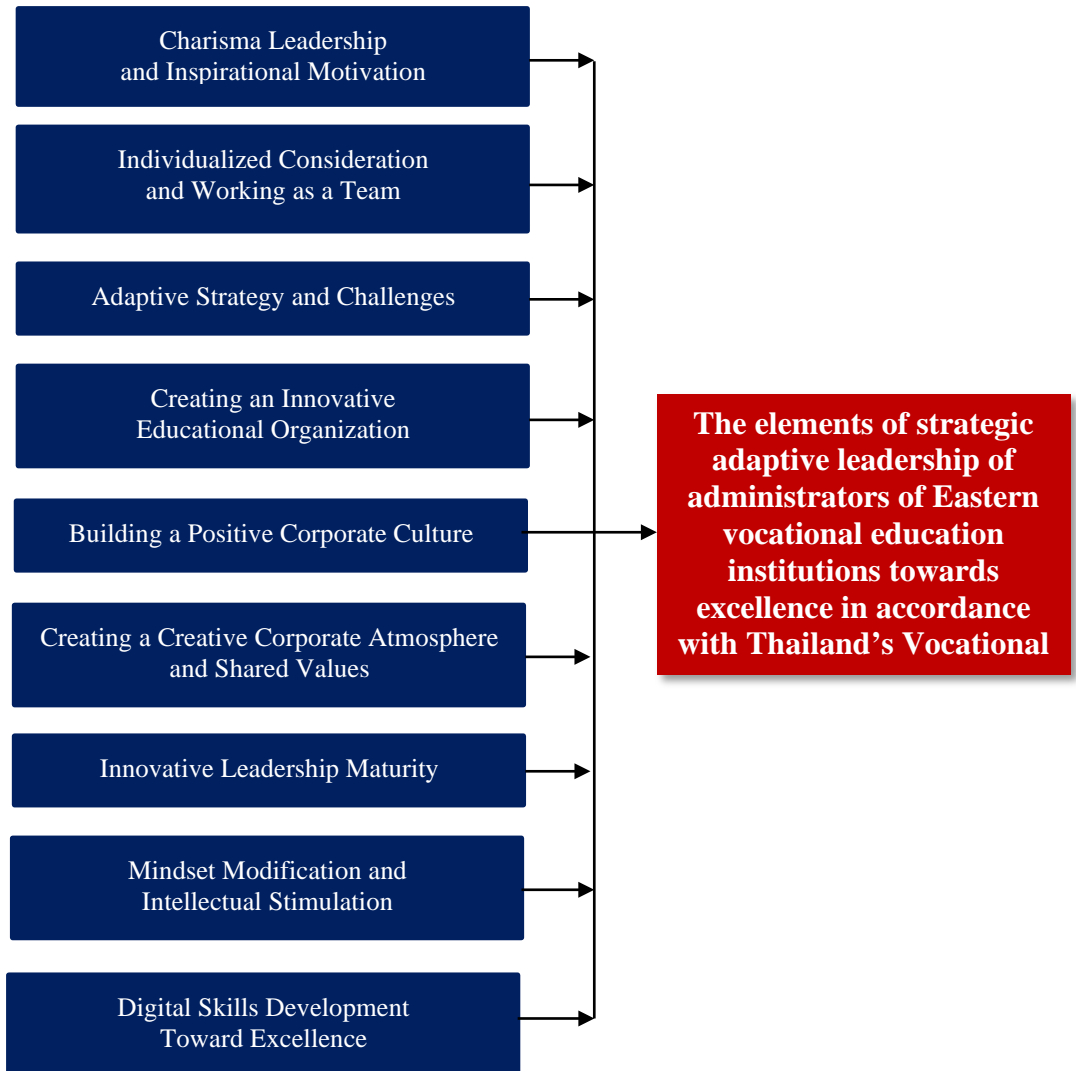
6.1 Conclusion

(1) The strategic adaptive leadership of administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy should have three characteristics: (i) personal characteristics, (ii) developing work toward excellence, and (iii) personnel development and adaptation to the next normal.

(2) The strategic adaptive leadership management of the administrators of Eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy comprised

9 elements and 108 indicators. The nine elements are graphically displayed in Figure 2.

Figure 2: Nine Elements of Strategic Adaptive Leadership of Administrators of Eastern Vocational Education Institutions toward Excellence in Accordance with Thailand's Vocational Education Management 4.0 Policy

(3) The researchers proposed a guideline for strategic adaptive leadership development of the administrators of eastern vocational education institutions toward excellence in accordance with Thailand's Vocational Education Management 4.0 Policy. The proposed guideline contained five aspects to develop strategic adaptive leadership of executives: (i) exemplary practice by case studies, (ii) teaching and training, (iii) meditation, (iv) learning

exchange via the use of media, technology and innovation in modern education, and (v) model education and experiential learning. The PIER process was suggested by the researchers: (i) Planning (P), (ii) Implement (I), (iii) Evaluation (E) and (iv) Reflection (R) for vocational institutions to develop these competencies in vocational education administrators.

It is important to develop leaders at all levels who can adapt to changing situations with the proposed characteristics and elements as identified in this present study. The adaptive leadership development program should yield positive outcomes for key personnel professional development.

6.2 Discussion

Based on the obtained results, there were nine points the researcher would like to bring to discussion:

(1) The first element of charisma, leadership and inspirational motivation appeared to serve well for adaptive leadership development that would affect followers to a great extent, as pointed out by Phakamach et al. (2022) and Fernandez & Shaw (2020) in that the behavior of leaders influences their achievement as well as relationship with instructors and staff for a friendly atmosphere, cooperation, inspiration and willingness to join efforts in achieving their common goals.

(2) The second element of individualized consideration and working as a team emphasizes the treatment of individuals with empathy and assistance to those inexperienced at work, as reported earlier by Phakamach et al. (2021a) in that educational institution executives have decision-making power in planning, budget allocation, personnel development and collaboration, and management strategies to align institutional management with the realities of society.

(3) The third element of adaptive strategy and challenges combines leaders' knowledge, skills, and creative ideas with strategic management abilities to improve the quality and efficiency of work processes within the organization. This point was in line with the study by Striteska & Prokop (2020) and Hawley (2021) in that people who live a quality and happy life must adapt to new ways of living. A good strategic management model for vocational education can help guide such adaptation in: (i) strategic planning, (ii) strategy evaluation, (iii) direction, (iv) strategy formulation, (v) strategy implementation, and (vi) strategy implementation.

(4) The fourth element of creating an innovative educational organization helps the organization to exist under the conditions of change. This point was in line with earlier research by Karia & Asaari (2019) and Phakamach et al.

(2022) that signified collaboration with stakeholders. Adaptive leaders need to encourage talented personnel to develop innovations and creating a positive atmosphere for an innovative organization.

(5) The fifth element of building a positive corporate culture is to create a corporate culture to lead the organization toward its goals. Rehman & Iqbal (2020) also found a need for new education in a time of transformative educational change, and leaders must be able to work under pressure with others. The process of developing people to embrace a strong corporate culture, keep up with the changes, and value a transparent and fair assessment system is for the personnel to achieve the common goals.

(6) The sixth element of creating a creative corporate atmosphere and shared values has its focus on a positive atmosphere, shared values, and setting a good example for the personnel. Phakamach et al. (2022) and Fernandez & Shaw (2020) put forward the practice of mobilizing organizational talent to use new technologies personnel in support of the proper use of technology in time.

(7) The seventh element of innovative leadership maturity deals with leaders' behavior with a vision and commitment to change for the organization's benefit. Phakamach et al. (2022) and Karia & Asaari (2019) also highlighted such an element by finding ways to combine skills, knowledge and ideas across different parts of the organization to create innovations, unique advantages, continuous improvement and development for sustainability in the future. These involve strategies related to ICT systems and educational innovations.

(8) The eighth element of mindset modification and intellectual stimulation encourages followers to think about solving problems or issues with new strategies and approaches. This element was reported earlier by Miller's (2019) in that intellectual stimulation is for followers to think rationally in real-world situations, and encourage followers to be creative and able to achieve their goals through mutual efforts.

(9) The ninth element of digital skills development toward excellence, was also highlighted by Bartsch et al. (2021) and Phakamach et al. (2021b). It is vitally important for adaptive leaders to offer their knowledge and skills to collaborate with followers in all situations, enable organizations to exist and grow sustainably amidst digital transformation.

It can be concluded that the nine elements and the proposed guideline for the strategic adaptive leadership development of eastern vocational education institute executives according to Thailand's 4.0 policy could benefit vocational education agencies in developing the needed competencies of adaptive leaders.

7. Suggestions

The researchers would like to make two suggestions in the direction of applying the obtained findings to the relevant context and supporting further research.

Considering each component of the attributes or behaviors for strategic adaptive leadership development in two categories--academic and research-oriented behaviors, and functional competencies, vocational education institution decision-makers need to value their faculty and staff talent groups and set a clear career path for their competencies development in keeping pace with the rapid transformation of education.

As for further research, those interested in the current issues of educational management and adaptive leadership may want to explore: (i) participatory action research on adaptive leadership, (ii) educational innovations expected of executives to have knowledge and skills of adaptive leaders, and (iii) in-depth research in curriculum design and adjustment to catch up with the disruptive effects of the digital technology on teaching for sustainable development of the present time and beyond.

8. Acknowledgements

9. The Authors

The first three co-authors Phongsak Phakamach, Ph.D., Darunee Panjarattanakorn, Ph.D., and Prapatpong Senarith, Ph.D. are full-time lecturers in the Graduate Department of Educational Management, Rattanakosin International College of Creative Entrepreneurship (RICE), Rajamangala University of Technology Rattanakosin (RMUTR). They share their academic and research interest in the areas of educational management, quality system management, innovative organizations, and current leadership issues in vocational education institutions.

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