TRANSFORMATIONAL LEADERSHIP OF SCHOOL ADMINISTRATORS AFFECTING SCHOOL MANAGEMENT IN DIGITAL ERA UNDER THE SECONDARY EDUCATIONAL SERVICE AREA OFFICE KANCHANABURI

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Abstract

The purposes of this research were to 1) identify the transformational leadership of school administrators under The Secondary Educational Service Area Office Kanchanaburi (SESAOK), 2) identify the school management in the digital era of school administrators under SESAOK, and 3) identify the transformational leadership affecting the school management in the digital era of school administrators under SESAOK. The research samples were 28 schools under The Secondary Educational Service Area Office Kanchanaburi. There were 8 respondents from each school including 1) a school director or an acting school director, 2) a deputy school director or an acting deputy school director, 3) two heads of departments, and 4) four teachers, with a total of 224. The research instrument was an opinionnaire concerning transformational leadership according to Leithwood, Jantzi, and Steinbach's concept and school management in the digital era according to Lee and Gaffney's concept. The statistics used for data analysis were frequency, percentage, arithmetic mean, standard deviation, and stepwise multiple regression analysis. The findings of this research were as follows:

1) The overall of transformational leadership of school administrators under SESAOK was at a high level. When considering each aspect, the average of all aspects was at a high level from the most to the least as follows: creating

and maintaining shared decision-making structures and processes, creating high-performance expectations, culture building, building a shared vision, developing consensus about goals, modeling important values and practices, creating intellectual stimulation, and providing individualized support, respectively.

   2) The overall of school management in the digital era of school administrators under SESAOK was at a high level. When considering each aspect, the average of all aspects was at a high level from the most to the least as follows: managing risk, shaping and selecting digital technology, managing information, achieving digital integration, overseeing the technology and education direction, securing school information assets, balancing internal and external control, managing enthusiasm, networking with the home technology, and financing the technology, respectively.

   3) Transformational leadership of school administrators on creating and maintaining shared decision-making structures and processes, building a shared vision, creating high-performance expectations, providing individualized support, and developing consensus about goals affected school management in the digital era under SESAOK, as a whole, with statistical significance at the .05 level.

Keywords: Transformational leadership; School management in digital era

Introduction

   At present, we are witnessing a shift from the traditional operational paradigm to one that is digital (Lee and Gaffney, 2008). Now that economic systems worldwide are moving towards Industry 4.0, Thailand has prepared policies that promote "Thailand 4.0" to move forward to a value-based economy (Office of the Education Council, 2021). Therefore, school management and learning management have to be inevitably changed to deal with the globalization. As the leaders of the schools in the 21st century, the school administrators need to understand the context of their schools in which external environments, especially the context of technology, affect the schools' internal environments which are students, learning, teachers, technology and learning innovations in the digital era (Chaemchoy, 2018). School principals and

education system officers face new challenges in leading schools into the digital age. These are educational and administrative in nature and concern the need to learn about the potential benefits and costs of new technologies, to build their capability, to take strategic action to maximize the benefits and minimize the costs, and to play an active role in decision making about the planning, implementation and outcomes resulting from investment in digital technology in their school communities and systems (Lee and Gaffney, 2008). In order to prepare for the changes of school management in the digital era, a school administrator must be a transformational leader who can be a good role model for teachers.

The Secondary Educational Service Area Office 8 is in charge of the basic education administration of 55 secondary schools in Ratchaburi and Kanchanaburi. To lead to effective and efficient educational administration of the schools and organizations under it, the office determined the strategies for educational development including 1) curriculum and teaching process, 2) teacher preparation and development, 3) testing, evaluation, quality assurance, and education standard development, 4) human resource preparation and development and research relating to the need for the country development, 5) ICT for education, and 6) administration (The Secondary Educational Service Area Office 8, 2018). However, the significant problem is there is a push to develop tools and materials more than to apply body of knowledge from ICT to students' learning and to develop teachers to gain adequate knowledge and skills of using ICT to develop their teaching materials and methods. Teachers are not able to efficiently apply ICT for education to their teaching, and students do not use ICT for education for their self-learning. Besides, some schools lack modern and quality media, which are insufficient for teachers and students' self-learning.

According to the above concepts and problems, the researcher would like to identify if the transformational leadership affects school management in digital era of school administrators under The Secondary Educational Service Area Office Kanchanaburi in order that this study will be a model to develop school administrators' transformational leadership and reform the education in digital era.

Research Objectives

1. To identify the transformational leadership of school administrators under The Secondary Educational Service Area Office Kanchanaburi.

2. To identify the school management in digital era of school administrators under The Secondary Educational Service Area Office Kanchanaburi.

3. To identify the transformational leadership affecting the school management in digital era of school administrators under The Secondary Educational Service Area Office Kanchanaburi.

Literature Reviews

The research entitled "Transformational Leadership of School Administrators Affecting School Management in Digital Era under The Secondary Educational Service Area Office Kanchanaburi" had gradually been gathered and synthesized from various concepts, theories, documentaries concerned and related researches. This chapter covered the main concepts of Transformational Leadership, School Management in Digital Era under The Secondary Educational Service Area Office Kanchanaburi (SESAOK), and related studies as below.

Theories and Concepts of Transformational Leadership: In 1973 Downton's study of rebel leadership is often cited as the beginning of systematic inquiry about transformational leadership in non-school organizations. Transformational forms of leadership are well suited to such challenges because of their potential for building high levels of commitment to the complex and uncertain nature of the restructuring agenda, and for fostering growth in the capacities school staffs must develop to respond productively to this agenda (Jantzi and Leithwood, 1995).

As its name implies, transformational leadership is a process that transforms or changes people. The term transformational leadership has appeared with increasing frequency in writings about education since the late 1980s. Leithwood, Jantzi and Steinbach stated that the central focus of transformational leadership should be the commitments and capacities of organizational members. They also offered eight dimensions of transformational leadership in schools: 1) building a shared vision, 2) developing consensus about

goals, 3) creating high performance expectations, 4) providing individualized support, 5) creating intellectual stimulation, 6) modelling important values and practices, 7) culture building, and 8) creating and maintaining shared decision-making structures and processes (Leithwood, Jantzi, and Steinbach, 1999).

Concepts of School Management in Digital Era: The digital era has stimulated various changes and transformations in almost all sectors of life, including in educational institutions (Sutarni and others, 2020). School management in this era is to enable administrators, teachers, and all the stakeholders to work as a team in order to accomplish the desired goals of the school. According to the concepts of Lee and Gaffney, school administrators do not only need to have a general understanding of the digital technology infrastructure in their school, but also provide effective oversight of how that technology is being used in classrooms to support teaching and learning; in school administration to manage information; and with parents, the school community, the system, other schools, governments and outside agencies to communicate and demonstrate accountability to these key stakeholders. Lee and Gaffney also suggested ten dimensions that school administrators might consider: 1) shaping and selecting digital technologies, 2) managing enthusiasm, 3) achieving digital integration, 4) balancing internal and external control, 5) managing risk, 6) securing school information assets, 7) managing information, 8) overseeing the technology and education direction, 9) networking with the home technology, and 10) financing the technology. (Lee and Gaffney, 2008).

Research Methodology

This research is descriptive research. In addition, the research design applied in this research is a one-shot, non-experimental case study. The population of this study was composed of 29 schools under SESAOK. The samples of 28 government schools under SESAOK were determined by using Krejcie and Morgan Table. Besides, they were recruited for the study using simple random sampling. In each of the schools, there were eight respondents including 1) a school director or an acting school director, 2) a deputy school director or an acting deputy school director 3) two heads of departments, 4) four teachers. Overall, 224 respondents from the 28 government schools under SESAOK.

Research Instrument: The instrument for collecting data was an opinionnaire consisting of 3 parts: 1) a checklist form asking for the personal information of respondents including gender, age, educational background, position and work experience, 2) an opinionnaire asking about transformational leadership of school directors according to Leithwood, Jantzi and Steinbach, and 3) an opinionnaire asking about school management in digital era according to Lee and Gaffney. The part 2 and 3 of the opinionnaire used the Likert's five rating scale (Likert, 1961).

Instrument development: The development of the instrument was as follows. First, all concepts, theories and the research concerning transformational leadership and school management in digital era both in Thailand and other countries were content analysed and synthesized. Then the researcher created the opinionnaire and translated it from English into Thai before having it checked by experts. Afterwards, the content validity and the language use of the questionnaire were checked by 5 experts. Content validity was measured by item objective congruence (IOC), and all items were found qualified with IOC between 0.6-1.0. After that, thirty-two edited and improved opinionnaires were tried out with four schools which are under The Secondary Educational Service Area Office Ratchaburi, and eight respondents from each of the schools consisting of 1) a school director or an acting school director, 2) a deputy school director or an acting deputy school director, 3) two heads of departments, and 4) four teachers were asked using the opinionnaire. Finally, the Cronbach's reliability coefficient alpha of the opinionnaire was tested by finding alpha coefficient according to Cronbach. The reliability coefficient of the instrument was found at 0.985.

Data collection: In accordance with the research objectives, the researcher collected data from the samples by using online opinionnaire on Google Forms from October to December 2022.

Data analysis: The unit of analysis applied in this research was the data from the 224 respondents, and the data was analysed by using a software package.

Statistics used in the study: In accordance with the research objectives, the researcher used 1) frequency and percentage to analyse the general information of the respondents, 2) arithmetic mean ($\bar{x}$) and standard deviation

(SD) to analyse transformational leadership and school management in digital era, then the result was compared to the arithmetic mean according to Best (Best, 1970), and 3) stepwise multiple regression analysis to analyse transformational leadership of school administrators affecting school management in digital era under SESAOK.

Results

The Findings of the Transformational Leadership of School Administrators

Table 1: The arithmetic mean, standard deviation, and level of the transformational leadership of school administrators under SESAOK (X_{tot})

No.	Transformational leadership of school administrators	Arithmetic mean ($\bar{x}$)	Standard deviation (S.D.)	Level
1	Building a shared vision (X_1)	4.23	0.90	High
2	Developing consensus about goals (X_2)	4.17	0.87	High
3	Creating high performance expectations (X_3)	4.28	0.87	High
4	Providing individualised support (X_4)	4.02	0.91	High
5	Creating intellectual stimulation (X_5)	4.14	0.91	High
6	Modelling important values and practices (X_6)	4.15	0.87	High
7	Culture building (X_7)	4.27	0.87	High
8	Creating and maintaining shared decision-making structures and processes (X_8)	4.29	0.84	High
	Total (X_{tot})	4.19	0.88	High

Regarding Table 1, the transformational leadership of school administrators under SESAOK (X_{tot}) was at a high level ($\bar{x}$ = 4.19, S.D. = 0.88). When considering the arithmetic mean of each aspect, all of the aspects of the transformational leadership of school administrators under SESAOK were respectively at a high level: creating and maintaining shared decision-making structures and processes ($\bar{x}$ = 4.29, S.D. = 0.84) , creating high performance expectations ($\bar{x}$ = 4.28, S.D. = 0.87), culture building ($\bar{x}$ = 4.27, S.D. = 0.87), building a shared vision ($\bar{x}$ = 4.23, S.D. = 0.90) , developing consensus about

goals ($\bar{x}$ = 4.17, S.D. = 0.87), modelling important values and practices ($\bar{x}$ = 4.15, S.D. = 0.87), creating intellectual stimulation ($\bar{x}$ = 4.14, S.D. = 0.91), and providing individualised support ($\bar{x}$ = 4.02, S.D. = 0.91), respectively. The standard deviation was between 0.84-0.91 which means that the respondents' opinions were consistent.

The Findings of the School Management in Digital Era of School Administrators

Table 2: The arithmetic mean, standard deviation, and level of the school management in digital era of school administrators under SESAOK (Y_{tot})

No.	School management in digital era of school administrators	Arithmetic mean ($\bar{x}$)	Standard deviation (S.D.)	Level
1	Shaping and selecting digital technology (Y_1)	4.32	0.80	High
2	Managing enthusiasm (Y_2)	4.21	0.76	High
3	Achieving digital integration (Y_3)	4.28	0.80	High
4	Balancing internal and external control (Y_4)	4.24	0.73	High
5	Managing risk (Y_5)	4.32	0.72	High
6	Securing school information assets (Y_6)	4.26	0.75	High
7	Managing information (Y_7)	4.30	0.76	High
8	Overseeing the technology and education direction (Y_8)	4.27	0.73	High
9	Networking with the home technology (Y_9)	4.20	0.81	High
10	Financing the technology (Y_{10})	4.07	0.82	High
	Total (Y_{tot})	**4.25**	**0.77**	**High**

Regarding Table 2, the school management in digital era of school administrators under SESAOK (Y_{tot}) was at a high level ($\bar{x}$ = 4.25, S.D. = 0.77). When considering the arithmetic mean of each aspect, all of the aspects of the school management in digital era of school directors under SESAOK were respectively at a high level. The aspects which had the highest mean were managing risk ($\bar{x}$ = 4.32, S.D. = 0.76) and shaping and selecting digital technology ($\bar{x}$ = 4.32, S.D. = 0.80. The rest were respectively in the high level: managing information ($\bar{x}$ = 4.30, S.D. = 0.76), achieving digital integration ($\bar{x}$

= 4.28, S.D. = 0.80), overseeing the technology and education direction ($\bar{x}$ = 4.27, S.D. = 0.73), securing school information assets ($\bar{x}$ = 4.26, S.D. = 0.75), balancing internal and external control ($\bar{x}$ = 4.24, S.D. = 0.73), managing enthusiasm ($\bar{x}$ = 4.21, S.D. = 0.76), networking with the home technology ($\bar{x}$ = 4.20, S.D. = 0.81), and financing the technology ($\bar{x}$ = 4.07, S.D. = 0.82), respectively. The standard deviation was between 0.72-0.82 which means that the respondents' opinions were consistent.

The Findings of the Transformational Leadership of School Administrators Affecting the School Management in Digital Era under The Secondary Educational Service Area Office Kanchanaburi (SESAOK)

Table 3: The analysis of the transformational leadership of school administrators affecting the school management in digital era under SESAOK (Y_{tot})

Source of variation	df.	Sum of Squares	Mean Squares	F	Sig
Regression	5	75.783	15.157	215.597	.000
Residual	218	15.325	0.070		

Multiple correlation coefficient (Multiple R)	0.912
Coefficient of determination (R Square)	0.832
Adjusted coefficient of determination (Adjusted R Square)	0.828
Standard error of estimate (Standard Error)	0.26514

Predictor variables	Unstandardise Coefficients		Standardise Coefficients	t	Sig
	B	Std.Error			
Constant	1.320	0.107		12.366	.000
1. Creating and maintaining shared decision-making structures and processes (X_8)	0.592	0.038	0.755	15.622	.000
2. Building a shared vision (X_1)	0.246	0.046	0.317	5.296	.000
3. Creating high performance expectations (X_3)	-0.201	0.041	-0.252	-4.914	.000

4. Providing individualised support (X₄)	0.220	0.048	0.284	4.602	.000
5. Developing consensus about goals (X₂)	-0.163	0.053	-0.193	-3.092	.002

Regarding Table 3, the predictor variables which were chosen to be in the equation include creating and maintaining shared decision-making structures and processes (X_8), building a shared vision (X_1), creating high performance expectations (X_3), providing individualised support (X_4), and developing consensus about goals (X_2). The multiple correlation coefficient of the school management in digital era under SESAOK (Y_{tot}) was 0.912 and the coefficient of determination (R Square) was 0.832. That is to say, creating and maintaining shared decision-making structures and processes (X_8), building a shared vision (X_1), creating high performance expectations (X_3), providing individualised support (X_4), and developing consensus about goals (X_2) could 83.20 percent predicted the school management in digital era, as a whole. The adjusted coefficient of determination (Adjusted R Square) was 0.828 and Standard error of estimate (Standard Error) was 0.26514. This means creating and maintaining shared decision-making structures and processes (X_8), building a shared vision (X_1), creating high performance expectations (X_3), providing individualised support (X_4), and developing consensus about goals (X_2) affected the school management in digital era (Y_{tot}), as a whole, with .05 level of statistical significance; however, creating high performance expectations (X_3) and developing consensus about goals (X_2) showed the negative correlation with the school management in digital era (Y_{tot}). The multiple linear regression equation was as follows:

$$\widehat{Y}_{tot} = 1.320 + 0.592(X_8) + 0.246(X_1) + -0.201(X_3) + 0.220(X_4) + -0.163(X_2)$$

Discussions

According to the research findings, the discussions are as follows:

1) The overall of the transformational leadership of school administrators under The Secondary Educational Service Area Office Kanchanaburi (SESAOK) was at a high level. This was not consistent with the research hypothesis which predicted that the transformational leadership of school

directors under SESAOK was at a moderate level. This was because SESAOK determined that the school administrators should possess transformational leadership and apply it to their school management, and the administrators recognized the importance of transformational leadership and, to lead their school to be successful, they needed to be a good role model for their personnel, listen to their needs and support them individually and create high-performance teams to accomplish the school's goals by utilizing the concepts of the leadership which include building a shared vision, developing consensus about goals, creating high performance expectations, providing individualized support, creating intellectual stimulation, modelling important values and practices, building cultures, and creating and maintaining shared decision-making structures and processes in their schools. This was relevant to the result of the study of Sirifak (2019) which found that transformational leadership of administrators of secondary school in Kanchanaburi province as a whole was at high level and as each aspect was high level when arranged by arithmetic mean from the highest to the lowest as follows: enabling others to act, modelling the way, challenging the process, encouraging the heart, and inspiring a shared vision. In addition, the research was consistent with the research of Kimani (2021) which found out that transformational leadership encourages loyal followers who give results, leaders must be encouraged to use this management style, and the study recommends that leaders need to adopt transformational leadership to achieve organizational performance. Organization should embrace transformational leadership and sound policies that will strengthen their position as a fundamental sector in generating human capital for the country's developmental and economic needs as well as the development of training program in leadership skills and competences in transformational leadership for the leaders.

        2) The overall of the school management in digital era of school administrators under SESAOK was at a high level. This was not consistent with the research hypothesis which predicted that the school management in digital era of school administrators under SESAOK was at a moderate level since the schools under SESAOK prepared for the changes in digital era systematically and attempted to enhance their schools to be ready for digital era in order to serve students, parents, personnel, and stakeholders by managing any risks that would occur, shaping and selecting digital technology appropriately, managing the school's information, achieving digital integration for everyone's best

experience, overseeing the technology and education direction, securing school information assets, balancing internal and external control, managing enthusiasm of their personnel, networking with the students' home technology, and financing the technology efficiently and effectively. This was consistent with the researching finding of Sutarni and others (2020) who suggested that to achieve the goals in this very digital era, the educational institutions have to involve in the change management and various challenges faced by educational institutions from the community in general as well as demands from policies and educational stakeholders require institutions to adjust themselves through a management with a focus on changes in various important components in the institution; moreover, all components of education in the institution need to be managed efficiently and effectively so that the institution can continue to adapt to change. In the same way, the study of Sunarto, Tyas, and Naibaho 2021) found that schools in the fast-paced era, in which knowledge is easily gained quickly, must be able to adjust to changes that occur in all lines (industry, trade, services, technology, etc.) and changes continue to occur and will always continue to impact the development of the school world; therefore, there needs to be an increase in the ability of schools to face increasing competition and challenges.

3) The researcher found that transformational leadership affected school management in digital era under SESAOK, as a whole, with statistical significance at the .05 level. This showed that transformational leadership of school administrators consisting of creating and maintaining shared decision-making structures and processes, building a shared vision, creating high performance expectations, providing individualised support, and developing consensus about goals had significant influence on school management in digital era. The result was linked to the findings of the study of Panhinkong and Phuangsomjit (2019) which discovered that transformational leadership of school administrators had significant influence on the being of learning organization of basic education schools under the Secondary Educational Service Area Office 7 at the .05 level, and transformational leadership of school administrators could predict learning organization of the schools by 72.0 percent, and also the researching findings of Kimani (2021) which denoted a positive relationship between performance and transformational leadership style and discovered that responsive and supportive transformational leadership behaviours have a positive impact on organizational growth; furthermore, the

study also recommended that leaders need to adopt transformational leadership to achieve organizational performance, and an organization should embrace transformational leadership and sound policies that will strengthen their position as a fundamental sector in generating human capital for the country's developmental and economic needs as well as the development of training programmes in leadership skills and competences in transformational leadership for the leaders.

New Knowledges

According to the study, it is clearly seen that transformational leadership of school administrators has significant influence on school management in digital era as shown in the chart below.

Regarding the chart, transformational leadership of school administrators on creating and maintaining shared decision-making structures and processes, building a shared vision, creating high performance expectations, providing individualised support, and developing consensus about goals affected school management in digital era.

Conclusions

The aspects of transformational leadership of school administrators which have significant influence on school management in digital era include creating and maintaining shared decision-making structures and processes, building a shared vision, creating high performance expectations, providing
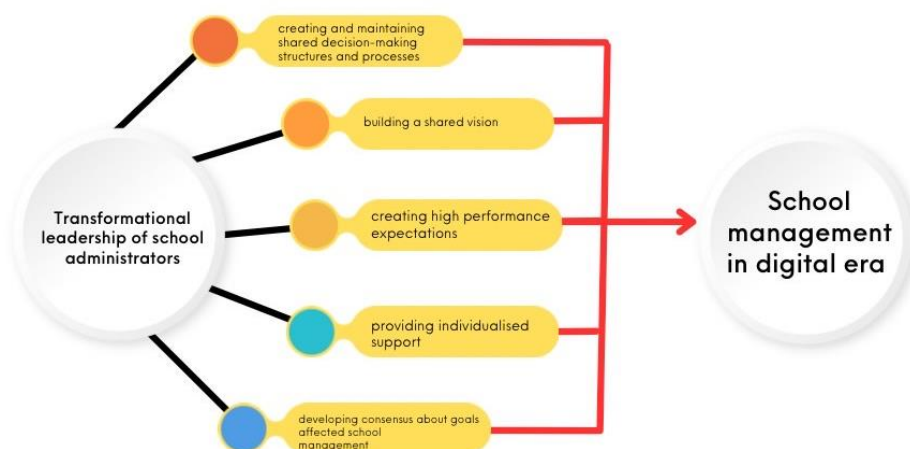
individualised support, and developing consensus about goals. The school administrators under The Secondary Educational Service Area Office Kanchanaburi (SESAOK) possess transformational leadership and apply it to their school management; they recognise the importance of transformational leadership and, to lead their school to be successful, they try to be a good role model for their personnel, listen to their needs and support them individually and create high-performance teams to accomplish the school's goals; however, SESAOK should provide the school administrators trainings or seminars about effective ways to provide individualised support in order that the administrators are able to provide support to personal needs of personnel and get to know individual teachers well enough to understand their problems and to be aware of their particular skills and interests more. Moreover, the schools under SESAOK are well prepared for the changes in digital era systematically and attempt to serve students, parents, personnel, and stakeholders efficiently and effectively; however, SESAOK should provide the school administrators trainings or seminars about effective ways to finance the school's technology in order that the schools are able to develop the capability for funding investments in digital more effectively and efficiently and channel the scarce resources towards the use of technology that will lead the schools and systems into the digital era.

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