The Relationship between Digital Leadership of School Administrators and Motivation in the Performance of Teachers under The Secondary Educational Service Area Office Samut Prakan

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ABSTRACT

The objectives of this research were to: 1) investigate the level of digital leadership of school administrators; 2) investigate the level of the motivation in the performance of teachers; and 3) examine the relationship between digital Leadership of school administrators and the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan. The population of research consisted of 333 teachers under the Secondary Educational Service Area Office Samut Prakan in the academic year 2024, which were selected by multi-stage random sampling. The research instrument was a questionnaire with a reliability of 0.987. The data were analyzed by mean standard deviation and Pearson's Product Moment Correlation Coefficient. The research findings were as follows: 1) The overall digital leadership of school administrators were at a high level 2) The overall of motivation in the performance of teachers were at a high level 3) The relationship between digital Leadership of school administrators and the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan were positively collected at the high level with the significance level of .01

Introduction

In the present era, human daily life has undergone significant changes due to the rapid advancement of technology. Technology has contributed to leaps in development across various fields, including education. Thailand has also progressed into the digital age under the government's Thailand 4.0 policy. This has led to strategies and development plans in the fields of economy and education. The Constitution of the Kingdom of Thailand mandates a 20-year national strategy (2018–2037) as the principal framework for sustainable national development. This aligns with the National Digital Economy and Society Development Plan (2018–2037), which serves as the country's master plan for driving long-term economic and social progress through digital transformation. The strategy focuses on utilizing technology to enhance the nation's economic competitiveness through innovation and technology. Its goal is to develop a workforce with the knowledge and skills necessary for living and working in the digital era [1]. A key factor in cultivating such skilled individuals is the digital leadership of school administrators, which plays a crucial role in driving technological advancement.

According to the National Education Plan, six key strategies have been outlined for educational development in alignment with the 20-Year National Strategy. Notably, Strategy No. 4 emphasizes educational equity by promoting learning opportunities through digital means and developing standardized educational databases that are rapidly accessible [2]. As a result, it is imperative to adapt to the digital age by integrating digital knowledge into the learning management process. Countries that excel in knowledge management are more likely to develop high quality human resources. Among all stakeholders, school administrators are regarded as the most crucial agents for driving educational development [3]. Therefore, school administrators must possess a comprehensive understanding of the digital context and be able to apply digital leadership skills to manage their schools effectively. Such application of digital leadership contributes to the overall efficiency and goal achievement of schools in the digital era.

As Thailand has entered the digital age, people are increasingly integrating digital technologies into their daily lives, particularly in education. Consequently, individuals must adapt by enhancing their digital skills and knowledge. In this context, school administrators must serve as role models in embracing change and responding effectively to the evolving digital landscape. Their leadership plays a crucial role in transforming school culture and driving institutions toward success [4]. This aligns with the findings of [5], who emphasizes that leadership in the digital era is essential due to the need for individuals to solve increasingly complex problems. Digital leadership requires not only an understanding of leadership concepts but also the soft and hard skills necessary to adapt to constantly changing work environments. Specifically, the digital leadership style of school principals involves integrating digital tools such as mobile devices, communication applications, and web-based platforms into leadership practices to drive organizational change and enhance school effectiveness. Therefore, digital leadership

among school administrators emerges as a key factor influencing school success, contributing to national development in line with the aspirations of the 20-Year National Strategy.

Motivation is a critical factor in enhancing employee performance, as it plays a key role in driving personnel efficiency, and this contributes to the overall effectiveness of educational institutions. Motivation shapes the behavior of staff, enabling them to perform effectively within the framework and culture of the institution [6]. Proper work motivation has a direct impact on employee performance. When personnel receive appropriate and positive motivation, it fosters good performance and efficiency, helping the institution achieve its goals. Conversely, if personnel receive inappropriate motivation for their work, such as feeling frustrated from working for excessively long periods, boredom from repetitive tasks can negatively affect performance. A lack of motivation may lead to serious consequences for the institution, such as negligence in duties, organizational damage, or disregard for rules, potentially resulting in misconduct, corruption, or personal gain at the expense of the institution [7]. Therefore, when personnel receive proper and effective motivation at work, they are more likely to commit themselves wholeheartedly, dedicating their time and energy to their duties. This dedication fosters sustainable and continuous development within the institution.

Previous studies have examined the development of motivation in the performance of teachers in educational organizations following the COVID-19 pandemic. It has been noted that many teachers encountered difficulties in their work, such as the limitations of onsite teaching and concerns over safety in schools. However, some teachers discovered new sources of inspiration and exhibited higher levels of motivation, often driven by the desire to overcome emerging challenges. It has also been found that motivated teachers tend to perform their duties more effectively than those who lack motivation, ultimately contributing to greater organizational success [8].

In 2024, there are 25 schools under the Secondary Educational Service Area Office Samut Prakan, with a total of 2,541 teachers. These schools have been advancing educational development in line with the Thailand 4.0 policy by supporting the development of teachers and educational personnel to become knowledgeable and competent. The Secondary Educational Service Area Office Samut Prakan, has outlined 8 dimensions and 22 policies aimed at improving education quality, modernizing practices, and ensuring sustainability. A key focus is on developing digital platforms for learning and utilizing digital tools as learning aids. The goal is to facilitate teaching with modern tools that align with current technology, emphasizing students' data analysis skills, consistent with the digital era's educational development [9].

However, many schools in Thailand continue to face problems related to low motivation in the performance of teachers, which stem from various factors. One critical factor identified by the researcher is the lack of digital leadership among school administrators. It has been found that some administrators manage without such incentives as limited career advancement opportunities, a lack of professional

achievement, and unappealing rewards. These issues contribute to decreased motivation among teachers in their professional duties.

Based on the background and significance outlined above, the researcher is particularly interested in promoting the development of digital leadership skills among school administrators. This study contributes to filling a gap in the current body of knowledge by exploring the relationship between digital leadership, specifically through four key components: digital vision, digital literacy, learning culture, and digital citizenship and motivation in the performance of teachers, specifically through four key components: growth, the work itself, recognition, and achievement under the Secondary Educational Service Area Office Samut Prakan. While previous research has explored digital leadership or motivation separately, few studies have examined their interrelationship in this specific educational setting. The findings aim to serve as a guideline for the development of educational institutions in Thailand, particularly in addressing the current challenges related to motivation in the performance of teachers in educational institutions in the digital era.

Conceptual framework

| Digital Leadership of School Administrators under The Secondary Educational Service Area Office Samut Prakan

1. Digital Vision
2. Digital Literacy
3. Learning Culture
4. Digital Citizenship | ↔ | Motivation in the Performance of Teachers under The Secondary Educational Service Area Office Samut Prakan

1. Growth
2. The work itself
3. Recognition
4. Achievement |
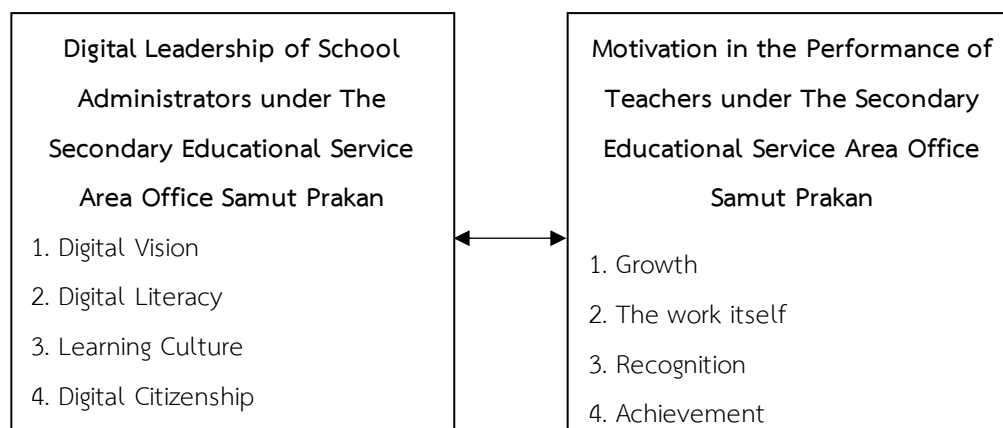
Figure 1 Conceptual framework of relationship between digital leadership and motivation

In the conceptual framework, the details of the independent and dependent variables in this study are as follows:

1. Digital Leadership refers to the behavior of school administrators that reflects a digital vision, the continuous use of digital skills for learning, and applying that knowledge to school management. These administrators act as role models and motivators for others in the organization to develop digital competencies. Digital leadership consists of four components:

1.1 Digital Vision: The ability to envision the future of the school through the application of digital technology and to lead innovation that aligns with the school's goals.

1.2 Digital Literacy: The professional capability to use digital tools effectively for management, communication, and school development.

1.3 Learning Culture: The creation and promotion of a digital learning environment that encourages innovation and accessibility for all stakeholders.

1.4 Digital Citizenship: Ethical and responsible use of digital technology, promoting digital safety, privacy, inclusion, and participation in digital society.

2. Motivation refers to internal and external stimuli that drives individuals to perform tasks efficiently to achieve organizational goals. This includes four components:

2.1 Growth: Opportunities for promotion and professional development that boost confidence and job satisfaction.

2.2 The work itself: Alignment between job roles and individuals' capabilities, with tasks that are meaningful, creative, and motivating.

2.3 Recognition: Receiving respect and appreciation for achievements from supervisors and peers, including praise, promotions, and increased responsibilities.

2.4 Achievement: The ability to complete tasks successfully, solve problems, contribute to the organization's goals, and feel proud of one's role and accomplishments.

Objectives of the study

1. to investigate the level of digital leadership of school administrators under the Secondary Educational Service Area Office Samut Prakan.

2. to investigate the level of the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan.

3. to examine the relationship between the digital Leadership of school administrators and the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan.

Methodology

The research on 'The relationship between digital leadership of school administrators and motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan' is survey research, was designed to describe and compare the digital leadership of school administrators and the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan.

Subjects

The population in this study consisted of 333 teachers under the Secondary Educational Service Area Office Samut Prakan in the academic year 2024. The sample size was determined using the sample size table by [10] at the 0.05 level of statistical significance, resulting in a required sample of 333 participants. Once the sample size was determined, a multi-stage random sampling technique was

employed. First, stratified random sampling was used based on the size of the schools. Then, the proportions of the sample were compared with the total population of teachers in each of the 25 schools. Finally, simple random sampling was applied to select participants within each school.

The multi-stage random sampling process was carried out as follows:

Step 1: Stratified random sampling was used to classify schools according to size, resulting in the selection of 11 extra-large schools, 6 large schools, 5 medium sized schools, and 3 small schools totaling 25 schools. The sample sizes for each group were determined proportionally to the population size, as shown in Table 1.

Table 1 Population and sample group in each school size

No.	Size of the school	Number of School (school)	Population (person)	Sample group (person)	Percentile
1.	Small School	3	38	5	1.50
2.	Medium School	5	281	37	11.11
3.	Large School	6	605	79	23.72
4.	Extra Large School	11	1617	212	63.67
	Total	25	2541	333	100.00

Step 2: Randomly select teachers from each school size using Simple Random sampling in proportion to the sample size, randomly selecting one school at a time until the sample size is complete in proportion, as shown in Table 2.

Table 2 Population and sample group in proportion to each school according to the size of the school

No.	Size of the school	School	Population	Sample Group
1.	Small School	Matthayom Wat Mai Samutkitwittayakom School	15	2
		Preng Wisutthathibodi School	18	2
		Saklasutthera U-patham School	5	1
2.	Medium School	Bangkaew Prachasarn School	70	9
		Matthayom Wat Srichanpradit School Under the Royal Patronage	61	8
		Luang Pho Pan Khlong Dan Anusorn School	60	8
		Hadammara Aksornluckwittaya School	53	7
		Ratwinit Suvarnabhumi School	37	5

Table 2 Population and sample group in proportion to each school according to the size of the school (Cont.)

No.	Size of the school	School	Population	Sample Group
3.	Large School	Patumkongka Samutprakan School	117	15
		Bodindecha (Sing Singhaseni) Samutprakan School	105	14
		Wat Songtham School	106	14
		Matthayom Wat Dan Samrong School	88	12
		Pomnakornrach Sawatyannon School	95	12
		Wisutthikasatri School	94	12
4.	Extra Large School	Samutprakan School	171	22
		Rajavinit Bangkaew School	165	22
		Rajapracha Samasai Ratchadaphisek Secondary School Under the Royal Patronage	155	20
		Bangplee Ratbumrung School	161	21
		Nawaminthrachinuthit Triam Udomsuksa Pattanakarn School	142	19
		Bang Bo Wittayakhom School	140	18
		Satri Samutprakan School	139	18
		Triam Udom Suksa Nomklao Samutprakan School	134	18
		Debsirin Samutprakan School	134	18
		Poolcharoen Witthayakhom School	139	18
		Nawaminthrachinuthit Suankularb Wittayalai Samutprakan School	137	18
	Total	25	2541	333

The population in this study was the teachers (n=333) who worked in schools under the Secondary Educational Service Area Office Samut Prakan in academic year 2024. However, there were 314 teachers in this research excluding those who couldn't participate in this research.

Instrument

The instrument used for data collection was a questionnaire on the level of digital leadership of school administrators and the level of the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan. The questionnaire consisted of three sections:

Section 1: Demographic information of the respondents, including educational background, years of teaching experience, and school size. This section used a checklist format.

Section 2: The level of digital leadership of school administrators. This section was a close ended questionnaire using a 5-point Likert scale, covering the following four components:

    1. Digital vision – 7 items

    2. Digital literacy – 7 items

    3. Learning culture – 7 items

    4. Digital citizenship – 7 items

The Likert scale scores were interpreted as follows:

    - Score 5: Highest level of digital leadership

    - Score 4: High level of digital leadership

    - Score 3: Moderate level of digital leadership

    - Score 2: Low level of digital leadership

    - Score 1: Lowest level of digital leadership

Section 3: The level of the motivation in the performance of teachers. This section was also a close ended questionnaire using a 5-point Likert scale, covering the following four components:

    1. Growth – 7 items

    2. The work itself – 7 items

    3. Recognition – 7 items

    4. Achievement – 7 items

The Likert scale scores were interpreted as follows:

    - Score 5: Highest level of motivation

    - Score 4: High level of motivation

    - Score 3: Moderate level of motivation

    - Score 2: Low level of motivation

    - Score 1: Lowest level of motivation

Development and validation of Instruments

The development and validation of instruments involved the following steps:

1. Review of related literature, theories, principles, and previous research to define content boundaries and ensure alignment with the conceptual framework and definitions.

2. Study of theoretical concepts related to questionnaire design for accurate and effective instrument development.

3. Development of the questionnaire to cover research objectives, variables, and definitions.

4. Submission of the draft questionnaire to academic advisors for feedback and revision.

5. Content validity was assessed by five experts who evaluated the consistency of each item with the defined constructs. The Item-Objective Congruence (IOC) index was used:

    - +1: Definitely consistent

    - 0: Uncertain

- -1: Definitely inconsistent

Only items with IOC values between 0.60 and 1.00 were retained and revised as needed.

6. The revised questionnaire was pilot tested with 30 teachers who were not part of the main sample. Item-total correlation ranged between 0.51–0.90, and the overall reliability (Cronbach's Alpha Coefficient) was 0.987.

7. The final version of the validated questionnaire was distributed to 333 sample teachers, with 314 complete responses returned (94.29%).

Data collection procedure

The researcher conducted the data collection as follows:

1. A formal request letter was issued from the Graduate School, Faculty of Education, Ramkhamhaeng University, to school principals of the 25 secondary schools selected.

2. A copy of the formal request along with a Google Form link to the questionnaire was sent to school principals to distribute to the sample teachers (333 respondents) between August 19-30, 2024.

3. A total of 314 questionnaires were returned, accounting for 94.29%. were reviewed for completeness before analysis using a statistical software package.

Data analysis

Once data were verified and collected, the researcher proceeded with statistical analysis as follows:

1. Data from Section 1 (teacher demographics) were analyzed using frequency and percentage.

2. Data from Section 2 (digital leadership) were analyzed using mean and standard deviation. Interpretation with the following interpretation [11]:

- 4.51–5.00: Very High

- 3.51–4.50: High

- 2.51–3.50: Moderate

- 1.51–2.50: Low

- 1.00–1.50: Very Low

3. Data from Section 3 (motivation) were also analyzed using mean and standard deviation, with the same interpretation scale as Section 2.

4. The relationship between digital leadership and motivation was analyzed using Pearson's Product-Moment Correlation Coefficient [12], with the following interpretation:

- 0.81 and above: Very high correlation

- 0.61–0.80: High correlation

- 0.41–0.60: Moderate correlation

- 0.21–0.40: Low correlation

- Below 0.20: Very low correlation

Results

The results of the study on the digital leadership of school administrators under the Secondary Educational Service Area Office Samut Prakan revealed that both the overall digital leadership and its individual dimensions were at a high level (Table 3).

Table 3 Mean, standard deviation of digital leadership of school administrators, both overall and by dimension

Digital Leadership	$\bar{X}$	S.D.	Level	Rank
1. Digital Vision	4.31	0.84	high	1
2. Digital Literacy	4.25	0.87	high	4
3. Learning Culture	4.28	0.85	high	3
4. Digital Citizenship	4.31	0.87	high	2
Total	4.29	0.86	high	

The results of the study on motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan revealed that both the overall digital leadership and its individual dimensions were at a high level (Table 4).

Table 4 Mean, standard deviation of motivation in the performance of teachers, both overall and by dimension

Motivation in the Performance	$\bar{X}$	S.D.	Level	Rank
1. Growth	4.29	0.80	high	2
2. The work itself	4.27	0.83	high	3
3. Recognition	4.23	0.84	high	4
4. Achievement	4.34	0.79	high	1
Total	4.28	0.82	high	

The results of the study on the relationship between digital leadership of school administrators and the motivation in the performance of teachers under the Secondary Educational Service Area Office Samut Prakan were positively collected at a high level with a significance level of .01 (Table 5).

Table 5 Pearson's Product-Moment Correlation Coefficient between digital leadership of school administrators and the motivation in the performance of teachers, both overall and by dimension

Digital Leadership	Motivation in the Performance				
	Y_1	Y_2	Y_3	Y_4	Y_{total}
X_1	.695**	.700**	.621**	.652**	.704**
X_2	.712**	.720**	.656**	.670**	.729**
X_3	.707**	.700**	.649**	.659**	.717**
X_4	.706**	.694**	.649**	.669**	.718**
X_{total}	.736**	.734**	.672**	.691**	.748**

Note: Statistically significant at the .01 level. The researcher designated variable X to represent the digital leadership of school administrators and variable Y to represent motivation in the performance of teachers.

Discussion and Conclusions

The digital leadership of school administrators under the Secondary Educational Service Area Office in Samut Prakan, overall and in each aspect, is at a high level. This may be because the school administrators demonstrate knowledge and ability in applying technology within the school. They can effect changes by the planned goals, motivating teachers within the institution to perform successfully through digital utilization, which results in a high overall perception of digital leadership from the teachers' perspectives. This aligns with the concept presented by [13], who states that school administrators understand and exhibit behaviors indicating their ability to utilize technology in schools, in line with the context and needs of both students and teachers. This finding is consistent with the research of [14], which studied school administration in the digital age, finding that overall management in the digital age is at a high level. It also aligns with the research of [15], which explored the development of digital leadership among school administrators under the Office of Buriram Primary Educational Service Area 2 and found that overall digital leadership is at a high level. The motivation in the performance of teachers under the Secondary Educational Service Area Office in Samut Prakan, both overall and in each aspect, is at a high level. This may be because the schools under this office place significant importance on teachers' performance and are prepared to promote continuous learning by organizing training sessions. This encourages teachers to take responsibility for their work enthusiastically, receiving support or motivation to achieve their goals. The focus is on completing their tasks efficiently, thus resulting in a high overall motivation in their performance. This aligns with the concept presented by [16], who states that teacher motivation refers to creating happiness in performing their duties, leading to positive attitudes and satisfaction upon achieving expected goals. This motivation is fostered by stimuli or encouragement that push teachers to strive in their work willingly, utilizing their knowledge

and skills with determination and dedicating personal time fully. This positive feeling helps reinforce teachers' satisfaction and attitude when their work successfully meets their expected goals. This finding is consistent with the research of [17], which studied the motivation in the performance of teachers and personnel at Benjamamarachuthit Ratchaburi School, finding that their overall motivation in performance is at the highest level. It also aligns with the research of [18], which examined the relationship between the use of power by school administrators and teachers' motivation in the performance of their duties under the Secondary Educational Service Area Office in Bangkok, Area 1. The research found that the overall motivation of teachers in this area is at a high level.

The digital leadership of school administrators has a significant positive relationship with the motivation in the performance under the Secondary Educational Service Area Office in Samut Prakan, at a high level and statistically significant at the .01 level. This may be due to the digital leadership behaviors of school administrators under this office demonstrating to teachers that they possess digital vision and knowledge, which they consistently and systematically apply in managing the school. They can develop the school and themselves to have the skills and knowledge necessary to keep pace with the digital age. Furthermore, they promote an atmosphere where staff utilize digital knowledge, technology, and equipment effectively, creatively, and appropriately concerning social, ethical, and legal issues. This allows them to be responsible for their digital knowledge utilization, leading to teachers receiving motivation and encouragement, whether in the form of praise, rewards, or incentives, driving their desire to accomplish school goals. This leads to a continuous desire for self-improvement in their knowledge and skills to perform assigned tasks effectively and efficiently, resulting in a high overall relationship between the digital leadership of school administrators and the motivation of teachers' performance. This is consistent with the research of [19], which examined the relationship between school administrators' leadership and its impact on teachers' motivation in primary schools under local educational authority group 11, finding a significant positive relationship at the .01 level. It also aligns with the research of [20], which studied the relationship between the digital leadership of school administrators and the innovative organization status of secondary schools in Uttaradit Province, finding a high positive correlation at the .01 level. Furthermore, it corresponds with the research of [4], which explored the relationship between the digital leadership of school administrators and the effectiveness of student support systems under the Secondary Educational Service Area Office in Nakhon Phanom, finding a significant positive relationship at the .01 level. Lastly, it aligns with the research by [21], which investigated the relationship between transformational leadership and structural leadership regarding teachers' motivation to teach, finding a high positive correlation at the .01 level.

From the findings of this study, it can be concluded that the relationship between digital leadership and teacher motivation in the Secondary Educational Service Area Office in Samut Prakan provides valuable insights into the role of school administrators in the digital era. School administrators today should possess and continuously develop both their digital leadership skills and their ability to

inspire and support teachers. The presence of all four components of digital leadership: digital vision, digital literacy, learning culture, and digital citizenship significantly contributes to the four components of motivation: growth, the work itself, recognition, and achievement. School administrators who effectively embody these aspects of digital leadership can greatly enhance teacher motivation, leading to stronger engagement, higher job satisfaction, and improved performance. Ultimately, such leadership plays a vital role in driving schools toward becoming successful educational institutions in the digital era.

Recommendations

School administrators must delegate tasks to subordinates appropriately, ensuring that these tasks are not monotonous. Assignments should allow the application of creativity, leading to new approaches or methods that prevent boredom. According to the research findings, motivation in teachers' work—specifically in the aspect of ** The work itself **—showed that the statement *"The tasks assigned to you are not boring"* was rated at a moderate level, with the lowest mean score among the items.

Thus, school administrators must strategically plan the development of their institutions to become forward-thinking, adaptable to change, and aligned with the digital era. This approach will foster respect and trust among teachers, motivating them to support the leadership of the administrators in managing the school effectively during the digital transformation. The research also revealed that the **digital vision dimension** of digital leadership had the lowest correlation with **teachers' motivation in terms of recognition**, indicating that this aspect needs further improvement.

Acknowledgements

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