Educational resource management influencing knowledge management in schools under the Ratchaburi Secondary Educational Service Area Office.

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Abstract

This study aimed to: 1) evaluate educational resource management in schools, 2) assess knowledge management practices, and 3) analyze the influence of educational resource management on knowledge management in schools under the Ratchaburi Secondary Educational Service Area Office. The sample included 286 administrators and teachers surveyed through a validated and reliable questionnaire (IOC = 0.67–1.00; Cronbach's alpha = 0.895). Data were analyzed using descriptive statistics, correlation analysis, and path analysis. Results indicated that educational resource management was rated highest overall, with Management, Materials, and Man scoring at the highest level, and Money at a high level. Similarly, knowledge management was rated highest overall, with supervision and evaluation, recognition and reward, planning, knowledge creation, and process preparation receiving the highest ratings, while cultural change, knowledge systems, communication, and knowledge sharing were rated high. A strong positive relationship ($p < 0.01$) was found between educational resource and knowledge management. Path analysis revealed that Management, Money, and Man had direct influences on knowledge management, whereas Materials had an indirect influence. Model fit indices (NFI = 0.94, CFI = 0.95, GFI = 0.91, RMR = 0.086) validated the model's fit with empirical data. The study highlights the importance of effective educational resource management to promote teacher innovation and improve student outcomes. Policymakers can leverage these findings to enhance resource allocation and knowledge management strategies in schools.

KEYWORDS: Educational resource management, Knowledge management, Secondary school

Introduction

The world today is a knowledge-based economic society. Every sector must have the ability to use knowledge to create innovations that drive the development of a knowledge and innovation society, benefiting society as a whole. This is an important aspect of the national development process. The main factors that will enhance the well-being of people in society include living well, eating well, being happy, and being able to compete or cooperate with other societies and other countries by relying on knowledge and applying it to benefit oneself, ones' family, ones' community for the betterment of society and the world. The Office of the Basic Education Commission (2022)

stated that schools operate according to their mission in 4 areas including academic administration, personnel management, financial management, budgeting, and general administration. These areas help schools achieve their objectives and goals in accordance with government policy. Porter (1998) proposed a new theory of the Dynamic Diamond Model regarding the administrative resources of an organization. This model consistis of 1) Man, 2) Money and budget, 3) Materials, and 4) Management. For an organization to create a paradigm for becoming a learning organization, schools must adopt a development paradigm as the key to success is knowledge management.

Thailand' s Digital Government Development Agency (Public organization, DGA, 2024) Section 11 stipulates that government agencies are responsible for developing their own knowledge to become a learning organization (DGA. , 2024) . The government officers must implement this law to perform their work correctly, quickly, and appropriately in the current situation. This promotes and develops their knowledge ability to create personal growth, to change the attitude of civil servants in their routine work. It also foster effective personnel relevant to knowledge and ability to create their vision for changing the attitude of civil servants through knowledge sharing. The Office of the Basic Education Commission (2022) organizes education in accordance with the National Education Act No4, (2023) , aiming to develop. Thai people into complete human beings, good, intelligent, happy, and Thainess. They should have the potential to continue education and pursue honest careers. Administrators must develop their own knowledge, as well as that of teachers, students, and committees, to become skilled in performing their own work These individuals should be able to use explicit knowledge from documents, textbooks, research and hidden (tacit) knowledge that has not yet been discovered. Research is a way to find new knowledge or increasing existing knowledge, enhancing the intellectual capital of schools. This can be used as a tool to help manage in schools, solve problems, and develop them efficiently.

The quality of school is a clear indication of the management achievement of the administrators. Panich (2024) said that knowledge is something that can be used to create innovations according to the need for developing knowledge, giving rise to new insight, and transforming knowledge into innovation. This knowledge serves as a tool for developing schools into learning organizations that contribute to transforming society into a knowledge-based economy. A knowledge-based economy is an area that every sector of society must prioritize, particularly in Thai society, which needs to develop the ability to create innovations from knowledge to drive significant change. This change requires a paradigm shift for the entire society to survive the pressures of globalization. Utilizing knowledge to create innovation in the context of resources in schools involves implementing a variety of practices to ensure school success and efficiency. Research by Chancharoen (2023) on factors influencing knowledge management in schools found that: 1) Factors influencing knowledge management in schools overall were at a high level; 2) Factors related to knowledge management in vocational schools were statistically significant at the . 05 level.

These factors included rewards and recognition, knowledge, skills, abilities, measurement and evaluation, work experience, school size, industrial area of school, Together, these facftors were able to predict knowledge management in schools with an accuracy of 81.00% . The researcher was interested in conducting research on the topic " Educational Resource Management that Influences Knowledge Management in Schools under the Ratchaburi Secondary Educational Service Area Office." at this time.

Purposes

1. To explore the educational resource management in schools under the Ratchaburi Secondary Educational Service Area Office.

2. To discover knowledge management in schools under the Ratchaburi Secondary Educational Service Area Office.

3. To investigate educational resource management that influences knowledge management in school under the Ratchaburi Secondary Educational Service Area Office.

Hypothesis

Educational resource management has both direct and indirect influences towards knowledge management in schools under the Ratchaburi Secondary Educational Service Area.

Benefit of Research

1. The school administrators can be taking this research result for managing their schools.

2. The Ministry of Education can be taking this research for creating the policy of the Ministry of Education.

Research Process

1.1Independent variable is educational resource management in schools under the Ratchaburi Secondary Educational Service Area Office. It consists of 4 factors based on the concept of Porter (2024) , including 1) Man 2) Money and budget 3) Materials, and 4) Management

1.2 Dependent variable is knowledge management in school under the Ratchaburi Secondary Educational Service Area Office. It consists of 9 factors derived from Boonmepipit (2008) , including 9 areas: 1 preparation knowledge management process, 2) supervision and evaluation, 3) knowledge sharing, 4) knowledge system, 5 behavior change, 6) planning 7) communication, 8)knowledge creation, and 9) recognition and reward**.**

Population and Sample

1. Population: The population were administrators and teachers in schools under the Ratchaburi Secondary Educational Service Area Office, totaling 1,618 individuals from 25 schools (data as of 16 June 2024).

2. Sample: The sample size was determined as follows:

2. 2. 1 A sample size was calculated using the Taro Yamane formula (1973) based on a population of 1,500 with a confidence level of ±5%

2. 2. 2 Proportions of the samples by Stratified Sampling were compared according to the actual number of administrators and teachers in the schools, resulting in a sample group of 333 individuals

2.2.3 The proportions were further analyzed based on the actual number of administrators and teachers in each school to determine the number of respondents from each institution.

2. 2. 4 A simple random sampling method was employed, using a drawing lots system to select respondents.

Instrument

Research instrument is a questionnaire divided into 3 parts, detailed as follows:

Part 1: This section collected general information of the respondents regarding gender, age, education, job position. It consisted of a check list survey with 4 questions.

Part 2: This part focused on educational resource management in school under the Ratchaburi Secondary Educational Service Area Office and including a total of 40 questions.

Part 3: This section addressed know ledge management in school under the Ratchaburi Secondary Educational Service Area Office, comprising a total of 65 questions.

Developing and validating the quality of research instrument

1. Develop a questionnaire based on the conceptual framework and definition of specific terms according to the variables used in the research instrument.

2. Present the questionnaire to 3 experts to validate the content and structure of the tool by caculating the Index of Item-objective Congruence (IOC) This questionnaire achieved an IOC value between 0 .67–1. 00, which was consistent with the established criteria.

3. Conduct a pilot test of the questionnaire with 30 administrators and teachers who are not part of the sample but closely resemble the target sample group. This step aimed to assess reliability using Cronbach's alpha method (Cronbach, 1970) . The questionnaire had a reliability coefficient of 0.895

4. Use the validated questionnaire to collect data from the sample group over a period of 3 months. The researcher had completed 268 questionnaires, accounting for 80.48% response rate for data analysis.

Data Analysis

1. Analyze the status and general information of the respondents using frequency and percentage.

2. Analysze the educational resource management and knowledge management of schools using the mean and standard deviation.

3. Analyze the relationship between educational resource management and knowledge management of schools using Pearson's product-moment correlation coefficient, following Hinkle's guidelines (Hinkle, 1998).

4. Analyze how educational resource management influence knowledge management in schools under the Ratchaburi Secondary Educational Service Area Office using path Analysis.

1. Analyze the status and general information of the respondents using frequency and percentage, as shown in table 1:

Table 1 Results of Analysis of respondents' status

Status		Frequency	Percentage
1. Gender	1.1 Male	121	45.15
	1.2 Female	147	54.85
	Total	268	100
2. Age	2.1 20-35 year	77	28.73
	2.2 36-50 year	92	34.33
	2.4 Over 51 year	99	36.94
	Total	268	100
3. Education	3.1 Bachelor's degree	145	54.10
	3.2 Master's degree	111	41.42
	3.3 Doctoral's degree	12	4.48
	Total	268	100
4. Management position			
	4.1 School director	12	4.48
	4.2 Deputy director of school	47	17.54
	4.3 Head of the learning subject group	84	31.34
	4.4 Head of the building	44	16.42
	4.5 Project leader teacher	81	30.22
	Total	268	100

From Table 1 , it was found that there were 121 males, accounting for 45.15% , and 147 females, accounting for 54.85%. The age group of 20-35 years included 77 individuals, accounting for 28.73%. The age group of 36-50 years included 92 individuals, accounting for 34. 33% . The age group over 51 years included 99 individuals, accounting for 36. 94% . In terms of education, there were 145 individuals with a bachelor'sdegree, accounting for 54.10% .Those with a master's degree numbered 111, accounting for 41. 42% , while those with doctoral degree totaled 12, accounting for 4. 48. Regardubg positions held, there were 12 school directors, accounting for 4.48 % , and 47 deputy school directors, accounting for 17. 54% . The number of heads of the learning group was 84, accounting for 31. 34% . There were also 4 4 building heads, accounting for 16. 42% , and project leader teachers numbered 81, accounting for 30.22%

2. Analysis of educational resource management of schools under the Ratchaburi Secondary Educational Service Area Office, as shown in table 2:

Table 2 Mean, Standard deviation, Level, and Order of Educational Resource Management (X_{tot})

n=268

Educational Resource Management	$\overline{X}$	S.D.	Level	Order
1. Man	4.54	.51	Highest	3
2. Money	4.48	.52	high	4
3. Material	4.61	.47	Highest	2
4. Management	4.68	.44	Highest	1
Mean	**4.58**	**.39**	**Highest**	

From Table 2 it was found that the educational resource management of schools under the Ratchaburi secondary educational service area office was at the highest level overall ($\overline{X}$=4.58, S.D.=.39). When classified by aspect, it was at the highest level in 3 areas, arranged from high to low average as follows: Management ($\overline{X}$= 4.68, S.D. = .44), Material ($\overline{X}$=4.61, S.D.=.47), Man ($\overline{X}$ =4.54, S.D.=.51). Additionally, there was a high level in 1 area which *was* Money ($\overline{X}$ =4.48, S.D.=.52), respectively.

3. Analysis of knowledge management of schools under the Secondary Educational Service Area Office Ratchaburi, as shown in table 3

Table 3 Mean, Standard deviation, Level, and Order of Knowledge Management (Y_{tot})

n=268

Knowledge Management	$\overline{X}$	S.D.	Level	Order
1. Knowledge management process preparation	4.53	.11	Highest	5
2. Supervision and Evaluation	4.59	.50	Highest	1
3. Knowledge sharing	4.45	.49	High	9
4. Knowledge system	4.47	.55	High	7
5. Culture change	4.48	.50	High	6
6. Planning	4.57	.50	Highest	3
7. Communication	4.46	.52	High	8
8. Knowledge creation	4.56	.52	Highest	4
9. Recognition and Reward	4.58	.51	Highest	2
Total	**4.53**	**.45**	**Highest**	

From Table 3 it was found that the knowledge management of schools under the Ratchaburi Secondary Educational Service Area Office was at the highest level overall ($\overline{X}$=4.53, S.D.=.11). When classified by aspect, it was at the highest level in 5 areas, arranged from high to low average as follows: Supervision and Evaluation ($\overline{X}$= 4.59, S.D.= .50), Recognition and Reward ($\overline{X}$= 4.58, S.D.=.51), Planning ($\overline{X}$=4.57, S.D.=.50), Knowledge creation ($\overline{X}$=4.56, S.D.=.52), Knowledge management process preparation ($\overline{X}$= 4.53, S.D.= .11). Additinoally, there was a high level in 4 areas, arranged from high to low average as follows: Culture Change ($\overline{X}$= 4.48, S.D.=.50), Knowledge System ($\overline{X}$=4.47, S.D.= .55), Communication ($\overline{X}$= 4.46, S.D. = .52) and Knowledge Sharing ($\overline{X}$ =4.45, S.D.=.49), respectively.

4. Analysis of the relationship between educational resource management (X) and knowledge management in schools (Y) as shown in Table 4

Table 4 The relationship between educational resource management (X) and knowledge management in schools (Y)

		X_1	X_2	X_3	X_4	X_{tot}
Y_1	Pearson Correlation	.814**	.740**	.754**	.789**	.866**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_2	Pearson Correlation	.761**	.744**	.635**	.693**	.794**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_3	Pearson Correlation	.586**	.542**	.627**	.510**	.634**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_4	Pearson Correlation	.773**	.600**	.748**	.651**	.775**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_5	Pearson Correlation	.741**	.665**	.807**	.756**	.828**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_6	Pearson Correlation	.849**	.744**	.772**	.789**	.881**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_7	Pearson Correlation	.771**	.686**	.777**	.756**	.835**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_8	Pearson Correlation	.860**	.686**	.796**	.785**	.873**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_9	Pearson Correlation	.878**	.739**	.795**	.794**	.897**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268
Y_{tot}	Pearson Correlation	.908**	.792**	.866**	.840**	.952**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
	n	268	268	268	268	268

** Correlation is significant at the .01 level (2-tailed).

From Table 4 it was found that educational resource management and knowledge management in schools had a high positive because the coefficient was between 0.542-0.952 relationship that was statistically significant at the .01 level.

5. Analysis of the relationship and Goodness of Fit of educational resource management and knowledge management in schools as a whole (Y_{tot}) shows the Chi-Square goodness of fit of the model as shown in table 5

Table 5 Goodness of Fit Index of the overall educational resource management Model

Goodness index	Criteria for consideration	Statistics in the model obtained
χ^2	Statistically not significant	χ^2 = 7764.48, df=1124, p = 0.00
NFI	More than .90	0.94
CFI	More than .90	0.95
GFI	More than .90	0.91
RMSEA	Between 0.10 ; 0.15	0.12
RMR	Near .05 Highest	0.086

From Table 5 considering the relationship between the independent variable (educational resource management) and the dependent variable (knowledge management in schools) overall (Y_{tot}), it was found that the statistical Chi-square test (χ^2) had a value of 7764.48, with 1124 degrees of freedom. The p-value is equal to 0.00. The NFI (Normed Fit Index) value is 0. 94. and the CFI (Comparative Fit Index) value is equal to 0. 95. Both of these values are greater than 0. 90, indicating that the model is good and consistent with the data (good fitting model).

The t-test values for all factors had values greater than 1. 96. and it was significant at the . 05 level. The GFI (Goodness of Fit Index) value was equal to 0.91 and the AGFI (Adjusted Goodness of Fit Index) value was equal to 0.28. Additionally, the PGFI (Parsimony Goodness of Fit Index) value was equal to 0. 31. All of the three values were within the acceptable range. The RMR value was equal to 0. 086, which was close to 0.05. Therefore, it can be concluded that the model is consistent with the empirical data from figure 1

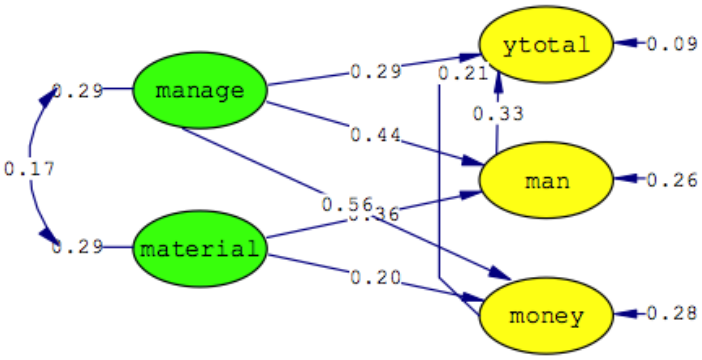

Figure 1 Total knowledge management (Y_{total})

From figure 1 show the influence with a diagram. It was analyzed to separate the relationship between variables into direct influences and indirect influences, there were not cause-and-effect relationships of educational resource management and knowledge management of school as a whole and shown in Table 6

Table 6 Shows the standard influence coefficients of educational resource management variables and knowledge management in school in total (Y_{total})

Valiables	Man			Money			Material			Management		
	Direct influence	**Indirect influence**	**Total influence**	**Direct influence**	**Indirect influence**	**Total influence**	**Direct influence**	**Indirect influence**	**Total influence**	**Direct influence**	**Indirect influence**	**Total influence**
Knowledge management in school model (Y_{total})	**0.33**	**0.00**	**0.33**	**0.21**	**0.00**	**0.21**	**0.00**	**0.12**	**0.12**	**0.29**	**0.15 0.12**	**0.56**

From Table 6 found that:

(A) The influence between educational resource management in terms of " man" and " knowledge management" in schools as a whole (Y_{total}) was as follows: Direct influence = 0.33, Indirect influence = 0.00, and Total influence = 0.33

(B) The influence of educational resource management in terms of " money" and "knowledge management" in school as a whole (Y_{total}) was as follows: Direct influence = 0.21, Indirect influence = 0.00, and Total influence = 0.21

(C) The influence between educational resource management in terms of material and " knowledge management" in school as a whole (Y_{total}) was as follows: Direct influence = 0.00, Indirect influence through the man = (0.36)(0.33) = 0.12, and Total influence = 0.12

(D) The influence between educational resource management in terms of "management" and knowledge management in schools as a whole (Y_{total}) was as follows: Direct influence = 0.29, Indirect influence through the "man" = (0.44) (0.33) =0.15, Indirect influence through the " money" = (0.56) (0.21)=0.12, and total influence = 0.56

Conclusion

1. The educational resource management in school was at the highest level overall. When classified by aspect, it was at the highest level in 3 aspects, ranked from high to low as follows: Management, Man, and Materials additionally, it was at a high level in one aspect: Money.

2. The educational resource management that influences knowledge management under Ratchaburi Secondary Educational Service Area Office, it was found that: The Man, Money and Management, they had a direct influence The Management had direct and indirect influence and the indirect through the Man and Money.

Discussion

1. The educational resource management in school was at the highest level overall. When classified by aspect, it was at the highest level in 3 aspects, ranked from high to low as follows: Management, Man, and Materials, it was at a high level in one aspect: Money. It may be because the schools had mission to developed the students into complete human beings by the teaching and learning process, It was the academic administration activity of the school to focus on developing the students to had quality characteristics as specified by the curriculum and what society needs, The teaching was an academic activity, that executives must used good quality management processes to promoted teachers and personnel in school to provide good and efficiency teaching and learning and the student was many quality. So the administrators must be supporting the educational resources that were adequate and used worthwhile included, Man was the teacher, Money was the budget and Material was the teaching media and Management was good manage from administrators. It can be seen that they were at the highest and high levels, respectively, which was consistent with the study of Huan Pinthuphan (2017) studied to educational resource management consists of Man, Money, Materials and Management too.

2 . Educational resource management that influences knowledge management in school under the Ratchaburi Secondary Educational Service Area Office overall, direct influence was Man, Indirect influence was Money, Material, and influence both directly and indirectly was Management. It may be because The Management, Man to create knowledge. The create innovation and organize teaching and learning student development to had the desired characteristics as specified by the curriculum. Management has direct and indirect influence on money and equipment. It was a factor supporting management and the work of teachers causes materials to had an indirect influence towards knowledge management of educational institutions and consistent with the research of Metawee Chaisilp (2018) doing research on study of factors influencing motivation to create new knowledg in the organization's knowledge management system.The research results found that factors influencing motivation include organizational factors with personal factors by influencing knowledge management and the factor of willingness to share knowledge has an influence on creating motivation to create new knowledge in the organization's knowledge management process significantly.

Recommendation

1. General recommendation

1 .1 The school administrators can be using Man, Money, Material, through Management for support the teachers to create innovations for teaching to develop knowledge, skill and morality of students.

1 .2 The Ministry of Education can be taking the results of this research to set policy and projects for develop school administrator and knowledge management in school to the highest quality in educational resources management.

1 . 3 The school administrators should be knowledge, abilities, and skills for using resources management in a cost-effective and creating maximum benefits that affect to the students.

2. Recommendation for research

2.1 The knowledge management model for school administration on VUCA world.

2. 2 The model of AI for school administration

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