Guidelines for the Application of Design Thinking Processes in School Administration of School Administrators Under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit

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Abstract

The purpose of this research is twofold: 1) to study the application of the design thinking process in school administration under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit, and 2) to explore the implementation of design thinking process in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit. This is a qualitative research study conducted using a sample of 57 educational administrators and 7 qualified personnel as participants. The research tools utilized include document analysis, questionnaires, and interviews, with statistical analysis involving mean values and standard deviations. The research findings indicate that: 1) The application of the design thinking process in school administration of school administrators is at its highest level. When considering each aspect, it was found that the model prototypes had the highest average, while data synthesis had the lowest average. 2) In terms of guidelines for applying design thinking processes in school administration, it was observed that confidence, empathy in work, and awareness of problems with open-ended questioning encourage creativity. Motivating and encouraging the expression of different ideas by participating in the development of models for use in problem-solving and the collection of information of suggestions, for improvement and development were key factors.

Keywords: design thinking, secondary educational service, school administration

1. Introduction

Nowadays, the rapidly changing global social situation and the advancement of technology have changed the world in many dimensions. Key principles of Thailand's development in the 13th National Economic and Social Development Plan (2023–2027). Under the national strategy, the goal is to develop the country towards achieving the goals in various dimensions concretely. At a time when the world is in a state of high external and internal changes, known as "VUCA World", it is likely to intensify in the future. As well as the result of changes in factors that will influence the structure and organization of the country in all dimensions. To be processed in determining the country's development direction that should be headed in the future to be strong and able to continue to grow sustainably amidst the variations that occur from all sides (National Economic and Social Development Agency No. 13, 2022)

As a result of the changes that have occurred. Therefore, countries around the world aim to set the administration direction by focusing on the development of innovation from the design thinking process to solve problems creatively. To drive manufacturing business organizations into the service sector and to meet the needs of service recipients. The development of the organization today is concentrated and the use of various modern technologies to support and is an important factor in determining the form of activities with policy strategies to drive the process. This is in line with the Ministry of Education's strong desire to implement the Digital Action Plan for Education (2020–2022) as a mechanism to transform the Thai education system. By applying innovation and modern technology to educational administration. The common goal are transforming the Ministry of Education into a Data-Driven Organization (Ministry of Education, 2020)

Educational administration is an important factor in developing human skills. Characteristics and competencies in living happily with others in society will lead to stability and stability of society and the nation (Office of the

Secretariat of the Education Council, 2017). Therefore, education administrators must play an important role in driving the implementation of educational policy focus. Manpower development and production need to set human resource development goals and production planning and prepare the workforce to enter the labor market that is ready for change.

Design thinking is one of the processes that is gaining attention nowadays from both business and government executives. It is the science of design that begins as a problem from understanding human needs. User data is collected to improve and develop work throughout. process to be able to meet the needs of the target group (Isornsena Na Ayutthaya & Trirattanapan, 2017). Due to its high flexibility, it can be adapted to a wide range of situations, including design, services, social development, and education administration. It focuses on a deeper understanding of the needs of the target audience (Thaptom, 2021). There are ways to generate new ideas by leaps and bounds outside the original box. Especially for complex projects and problems. It requires a team with a wide range of expertise. It is necessary to create and experiment with prototypes with users (Kelley, 2018). Creative tools can be used to address a wide range of genre challenges. To obtain guidelines or innovations that meet the target audience and situation by using the concept of Stanford Design School (2005). The first step is to deeply understand your target audience. Empathize and define, which are the steps of understanding and interpreting problems To set the goals of the project. It leads to the creation of ideas using creativity and perspectives from many people in the team to create new answers or solutions. In addition, to create prototypes and tests. This includes developing prototypes to obtain quality guidelines or innovations in educational administration.

Therefore, the administration of educational institutions during the transition period amidst changes in all dimensions. It requires a pattern or process that will lead to a real goal of success. Therefore, the researcher is interested in studying the application of the design thinking process in school management of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit. To study the state of school administration of school administrators who can use the information as a guideline for applying design thinking processes in school administration. This includes the development of the organization to be an organization of innovation in school administration in a sustainable future.

2. Methodology

2.1 Research Form

This research is qualitative. The research is carried out by studying documentaries by collecting information from documents, books, journals, both theoretical and non-theoretical. Related concepts and research to use the information received to analyze educational issues. Situation analysis It is a study of the application of design thinking processes in school administration by school administrators. Under the jurisdiction of the Secondary Educational Service Area Office, Phitsanulok, Uttaradit.

2.2 Population and Samples

The population used in the study consisted of 2 main target groups: 1) Information group i.e. school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit 2) Experts in educational administration and school administration, in which the researcher selects samples to facilitate data collection and to obtain data from samples with samples in the research, a total of 64 persons are as follows:

1) School Administrator under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit 57 persons using purposive sampling

2) Experts in educational administration and school administration with experience of 10 years or more and with master's degree in education, 7 persons using purposive sampling method.

2.3 The Instruments Used in the Study

The instruments used for data collection consisted of:

1) Document Analysis Form

2) Questionnaire

3) Semi-structured interview form

2.4 Data Collection

1) Documentary study by gathering information from documents, books, journals, both theoretical and theoretical. Concepts and related research to use the obtained data to analyze educational issues.

2) Situational analysis is a study on the application of design thinking processes in school administration of

school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit.

The questionnaire is characterized by a 5-level estimation scale (Srisa-art, 2017). Respondents are asked to choose in order of their opinions, with the tool used being semi-structured interviews.

3) Interview is a selection of issues for each item with the lowest average to create questions in the interview and audio recorder. It is to find a way to apply design thinking process in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit

2.5 Data Analysis

1) Qualitative data: The researcher analyzed the data according to the study objective using the method of analysis of data by interpretation, which is obtained from the analysis of documents and interviews to summarize issues according to the data group and analyze the relationship of the data.

2) Quantitative data: The researcher used the data obtained from the inquiry form to analyze the data with a statistical package that can be used to analyze the data appropriately. It is an analysis using descriptive statistic by displaying statistical analysis as mean and standard deviation.

3. Results

For the research at this time, the research team classified the data obtained from the study and presented research results according to the determined objective. The study results can be summarized as follows:

1) The study of the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit

Table 1. The results of the study on the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit (n = 57)

No.	Application of Design Thinking Process in School administration	μ	σ	Condition Level
1	Understanding the problem (Empathize)	4.90	0.30	most
2	Data synthesis (Define)	4.85	0.40	most
3	Brainstorming (Ideate)	4.89	0.32	most
4	Modeling (Prototype)	4.91	0.29	most
5	Testing (Test)	4.91	0.29	most
	Total	**4.89**	**0.32**	**most**

Source: Meethong, Janto, & Wechayaluck, **2023**.

From Table 1, it is evident that the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit that overall was at the highest level (μ = 4.89, σ = 0.32). When considering the aspects, in descending order of average, the rankings are as follows prototype and testing (μ = 4.91), understanding problems eempathizes (μ = 4.90), brainstorming (Ideate) (μ = 4.89) and Data synthesis (Define) (μ = 4.85)

Table 2. Application of Design Thinking Process in School Administration of School Administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit that understanding the problem (Empathize) (n = 57)

No.	Application of Design Thinking Process in School Administration Understanding the problem (Empathize)	μ	σ	Condition Level	Order
1	Observation of work behavior of teachers and personnel in educational institutions	4.88	0.33	most	4
2	Observing the collaboration of teachers and staff in educational institutions	4.91	0.28	most	3
3	Inquiry into problems in the work of teachers and staff in educational institutions	4.95	0.22	most	2
4	Participation in work with teachers and school personnel	4.96	0.18	most	1
5	Having confidence in the work of teachers and staff in educational institutions	4.82	0.46	most	5
	Total	**4.90**	**0.30**	**most**	

Source: Meethong, Janto, & Wechayaluck, **2023**.

From Table 2, it is evident that the study of the application of design thinking processes in school administration of school administrators. Empathize at the highest level (μ = 4.90, σ = 0.30). When considering the issues with

the lowest average No.5 Confidence in the work of teachers and personnel in educational institutions (μ = 4.82)

Table 3. The results of the study on the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit Data synthesis (Define) (n = 57)

No.	Application of Design Thinking Process in School administration data synthesis (Define)	μ	σ	Condition Level	order
1	Recognizing problem conditions with open-ended questioning to encourage creativity of teachers and school personnel	4.75	0.60	most	5
2	Analysis of problems of teachers and school personnel	4.89	0.31	most	2
3	Collection of issues of teachers and school personnel	4.88	0.33	most	3
4	Summary of issues of teachers and school personnel	4.91	0.28	most	1
5	Identifying problems according to the needs of teachers and school personnel	4.84	0.49	most	4
	Total	**4.85**	**0.40**	**most**	

Source: Meethong, Janto, & Wechayaluck, **2023**.

From Table 3, it is evident that the study of the application of design thinking processes in school administration of school administrators. Data synthesis (Define) Overall characteristics at the most level (μ = 4.85, σ = 0.40). When considering the issues with the lowest average is No.1. Recognizing problem conditions with open-ended questioning to encourage creativity of teachers and school personnel (μ = 4.75).

Table 4. The results of the study on the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit Brainstorming (Ideate) (n = 57)

No.	Application of Design Thinking Process in School Administration Brainstorming (Ideate)	μ	σ	Condition Level	order
1	Leadership in brainstorming for problem solving of teachers and school personnel	4.93	0.26	most	1
2	Stimulating the creation of different ideas of teachers and school personnel	4.84	0.41	most	5
3	Jointly finding solutions to various problems of teachers and school personnel	4.91	0.34	most	3
4	Providing opportunities for teachers and school personnel to express their opinions constructively.	4.93	0.26	most	1
5	Joint selection of solutions for teachers and school personnel	4.86	0.35	most	4
	Total	**4.89**	**0.32**	**most**	

Source: Meethong, Janto, & Wechayaluck, **2023**.

From Table 4, it is evident that a study on the application of design thinking processes in school administration of school administrators. Brainstorming (Ideate) Overall, it is at the highest level (μ = 4.89, σ = 0.32). When considering the issues with the lowest average is No.2. Stimulation of differential thinking among teachers and school personnel (μ = 4.84).

Table 5. The results of the study on the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit Modeling (Prototype) (n = 57)

No.	Application of Design Thinking Process in School Management Modeling (Prototype)	μ	σ	Condition Level	order
1	Co-planning modeling to solve problems of teachers and school personnel	4.91	0.28	most	3
2	Co-design modeling to solve problems of teachers and school personnel	4.95	0.22	most	1
3	Co-modeling to solve problems of teachers and school personnel	4.89	0.31	most	4
4	Testing and discussing modeling in solving problems of teachers and school personnel	4.93	0.26	most	2
5	Co-development of models to be used to solve problems of teachers and school personnel	4.86	0.39	most	5
	Total	**4.91**	**0.29**	**most**	

Source: Meethong, Janto, & Wechayaluck, **2023**.

From Table 5, it is evident that the study of the application of design thinking processes in school administration of school administrators. Overall modeling is at the highest level (μ = 4.91, σ = 0.29). When considering the issues with the lowest average, item 5 is joint development of models to be used in solving problems of teachers and school personnel (μ = 4.86).

Table 6. The results of the study on the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit Testing (Test) (n = 57)

No.	Application of Design Thinking Process in School Management Test Aspects (Test)	μ	σ	Condition Level	order
1	Testing the model to observe the performance of the application.	4.88	0.38	most	4
2	Gathering opinions suggestions for improvement	4.77	0.59	most	5
3	Improvement a model update based on developer feedback	4.96	0.18	most	2
4	Testing new models after improvements and developments	4.98	0.13	most	1
5	Evaluation and application of practical school administration models	4.96	0.18	most	2
	Total	**4.91**	**0.29**	**most**	

Source: Meethong, Janto, & Wechayaluck, **2023**.

From Table 6, it is evident that that the overall level of the study of the application of design thinking in school administration of school administrators (Test) was at the highest level (μ = 4.91, σ = 0.29). When considering the issues with the lowest average is No. 2, the collection of opinions suggestions for improvement (μ = 4.77)

2) The study guidelines for applying the application of design thinking processes in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit

Researcher used the results of the analysis of data from step 1 in each area with the lowest average to create an interview the experts to guide the application of design thinking process in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit by luminaries 7 persons. The guidelines were then re-examined by school administrators for suitability. The improved approach from the interview results emerged as 5 approaches as follows:

Solution 1 Confidence and empathy in the work of teachers and school personnel are as follows:

① Executives should respect themselves before having confidence in their own actions.

② Should be responsible, dare to think and make decisions without fear of obstacles and be able to make important decisions. 3. Teachers and staff must be led to deal with organizational issues while still respecting their decisions. Find ways to resolve the issue as a group, rather than attempting to avoid it.

Solution 2 Perception of problem conditions of school administrators by asking open-ended questions to encourage the creativity of teachers and school personnel are as follows:

① Administrators should recognize the problem by allowing teachers and staff to express constructive opinions. It will strengthen the organization's relationships by listening to and exchanging views without bias.

② To build strong relationships with their colleagues, administrators must be receptive to all viewpoints. Due to the difficulty of maintaining unity at work if the organization's members have poor or low relationships. Additionally, when team members lack commitment and dedication, it will be difficult for them to function effectively as a team. This will lead to problems in the team system.

Solution 3 Creating, encouraging, and supporting different expression of ideas of teachers and school personnel are as follows:

① Administrators should allow teachers and staff to share their views on subjects without hesitation. There are no limitations or exclusions, and there will be several opinions.

② Administrators should create opportunities for teachers and staff to consider new solutions to problems. It is not specific to one's own or any person's thoughts.

Solution 4 Participation in the development of models for use in solving problems of teachers and school personnel is as follows:

① Administrators should be involved in developing models to be used to solve problems of teachers and personnel in school administration.

② Administrators must emphasize the significance of modeling in guiding the creation and building of prototypes for school members that can be developed during the testing phase.

Solution 5 The collection of information of feedback suggestions for improvement and development is as follows:

① Administrators should collect data at every step to gather opinions, suggestions, and improvements to solve problems.

② As part of school administration, teachers and staff cooperate to assess models and provide solutions to a variety of issues that affect teachers and personnel.

4. Discussion

1) The study of the application of design thinking process in school administration, according to the opinion of the school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradi. found that the overall level was the highest. This may be because school administrators are aware of the importance of modern administration with design thinking processes that are important mechanisms and variables in the quality of education management and influence the quality of administrative outcomes. The Secondary Educational Service Area Office, Phitsanulok, Uttaradit, which supervises, monitors, and regulates all schools within its authority, reflects this in its policy and in its focus on using the district area as a base for educational administration and management. An innovative model has been developed to drive the quality of education in line with research by Pittayasenee and Yuangsoi (2021) who have studied design thinking in teacher development to be a systematic process of innovative creativity by taking "people" as the center of design to solve problems appropriately. In the study to solve problems and the application to design and develop innovations will help solve everyday problems. Similarly, Do DEA 21 (2014), states that the educational leadership of school administrators in the 21st century should play an administrative role by understanding the people in the organization and providing opportunities for teachers to consider, reflect, define the goals, and collaborate to achieve professional learning in a risky environment. It can then be used as an opportunity to learn from a truly professional design thinking process leading to the creation of objects, systems, or measurable human interaction. It has been demonstrated that design thinking is human-centered and is widely used in business and government administration (King Mongkut's University of Technology Thonburi, 2017).

2) Guidelines for the application of design thinking process in school administration of school administrators under the Secondary Educational Service Area Office, Phitsanulok, Uttaradit. is as follows: Solution 1 Teachers and school staff who are comfortable and empathetic about their work have confidence, responsibility, and courage to think and make decisions. For teachers and staff to deal with difficulties and come up with solutions together, skills in leadership are necessary. Solution 2 Recognizing the problem condition of school administrators by asking open-ended questions to encourage the creativity of teachers and school personnel. Administrators acknowledge the issue by allowing teachers and staff to provide constructive feedback. Opinion and free discussion of ideas must be open to all points of view and give equal importance to all teams. Solution 3 Creating, encouraging, and supporting the expression of different ideas by teachers and school personnel. Administrators give teachers and staff the opportunity to express their opinions on various issues and listen to a variety of opinions to have an opportunity to consider and choose the appropriate approach. Solution 4 Participation in the development of models for use in solving problems of teachers and school personnel. The administration co-developed a model to be used to solve problems of teachers and personnel. The emphasis of modeling is to guide the design and creation of prototypes with school members which can be developed at the testing stage. Solution 5 Gathering information of feedback for improvement and development. Administrators collect data at every step to gather opinions. Suggestions, improvements, and solutions to various problems in participation in model evaluation and development. It will solve various problems of teachers and personnel in the administration of educational institutions. Therefore, it is evident that the application of design thinking processes in the school. The administration is a key element in driving the process of solving problems in line with research by Hemthanon, Suebnusorn and Sarasawang (2020). They will study the context of the school in applying design thinking to the educational institution. It was found that administrators are the main supporting factor for teachers to realize and understand design thinking. Teacher development is promoted through the establishment of an Individual Personal Development Plan (ID Plan), the creation of a Professional Learning Community (PLC), Coaching, and Mentoring. The application of design thinking is a process and management concept that develops creativity and innovation that advances using flexible and repeatable methods by seeking teaching strategies for skills. In the 21st century, there was a process of creating new ideas by leaps and bounds outside the original box. This is especially true for complex conditions that require a multidisciplinary team. It is

necessary to create and experiment with prototypes with users (Kelley, 2018). Therefore, design thinking can be applied to teaching, learning, curriculum design, and organizational management (Lor, 2017).

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