Development of Instructional Model Based on Design Thinking and Reflective Practice Approaches in creating innovative students' educational administration in the field of educational administration innovation, college management innovation Rajamangala University of Technology Rattanakosin

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Abstract- The teaching model is based on the concept of design thinking together with the concept of reflection and practice to promote the ability to create innovation in educational administration of students in the field of educational administration innovation, College of Management Innovation, Rajamangala University of Technology Rattanakosin. It will motivate individuals to bring creativity together with inspiration to create and develop innovation that reflects the uniqueness of the educational administration profession of students in the field of educational administration innovation.

This research aims to create a teaching model based on the concept of design thinking together with the concept of reflection and practice in order to promote the ability to create innovation in educational administration of students in the field of educational administration innovation by Using the concept of innovative design thinking together with the concept of reflection, thinking and practice are divided into 2 phases: Phase 1: Study and analysis of fundamental data in To develop a teaching and learning model based on the concept of design thinking together with the concept of reflection and practice to promote the ability to create innovation in educational administration of students in the field of educational administration innovation by studying documents and research that Involve and examine the definition and determination of the ability to create innovation in educational administration of students in innovative educational administration by experts. Teach according to the concept of design thinking in conjunction with the concept of reflection and practice consisting of a manual teaching model. And learning management plans. The samples were five experts in curriculum, instruction and evaluation. The research tools were the evaluation form, the teaching model based on the concept of design thinking together with the reflection concept. Think of the compliance with the validity and suitability of the teaching style and related documents and data analysis using mean and standard deviation.

The results of the research can be concluded that the teaching model based on the design thinking concept. Together with the concept of reflection and practice to promote the ability to create innovation in educational administration of students in the field of educational administration innovation consists of 5 steps: 1) preparing and creating innovation in educational administration 2) education. 3) researching and verifying solutions to school administration problems; 4) creating and verifying an innovative model for school administration; and 5) disseminating and reflecting on the evaluation of the education model. Teaching It was found that the teaching model based on the concept of design thinking together with the concept of reflection and practice to promote competence was appropriate at the highest level, those interested in implementing this style of instruction should carefully study the Instructional Model Manual in
order to achieve the objectives of the teaching style. According to the concept of design thinking together with the concept of reflection and practice

**Keywords:** teaching style, design thinking concept, reflection, practice to promote competence, ability to create innovation in educational institution management

**Introduction**

Century Education Challenges 21 To prepare students for life in the century 21 is an important aspect of the social transformation trend that occurs in the century. 21 Affecting the way of life of society as a whole, teachers need to be alert and prepared to organize learning to prepare students to have the skills for going out into the world, that is, learning skills (Learning Skill) resulting in a change in learning management so that children have knowledge, abilities and necessary skills as a result of the reform of teaching and learning management. as well as preparation in various fields, which [2] discussed skills for living in the 21st century as follows:

- Core Subjects) include the mother tongue and major languages of the world, arts, mathematics, governance and civic duty. Economics, Science, Geography and History
- This core course will lead to the formulation of conceptual frameworks and strategies that are important to Learning management in interdisciplinary content (Interdisciplinary) or topic for the 21st century by promoting understanding of the core subject matter. and insert the skills of the century 2 Access all core subjects including Global Awareness, Finance, Economics, Business and Entrepreneurship (Financial, Economics, Business and Entrepreneurial Literacy), Good Citizenship (Civic Literacy and Health Literacy)
- Learning and Innovation Skills It determines the readiness of students to enter today’s increasingly complex world of work: creativity and innovation, critical thinking and problem solving. Communication and cooperation
- Information, Media and Technology Skills Due to the fact that information is disseminated through many media and technologies, learners must have the ability to demonstrate critical thinking skills and can perform a variety of tasks based on knowledge in many areas as follows: information knowledge Media knowledge and technology knowledge
- Life and Career Skills in living and working in the present era to be successful Students will need to develop key life skills: flexibility and adaptability, creativity and independence. Social and cross-cultural social skills Being a creator or producer Productivity and Accountability, Leadership and Responsibility.

The 21st century skills that everyone must learn throughout their lives are learning 3R x 7C. The 3R skills are Reading, (W)Riting (Writable), and (A)Arithmetic’s (. Calculations as). The learning skill 7C consists of Critical Thinking and Problem Solving (critical thinking skills. and problem-solving skills) Creativity and Innovation (creativity and innovation skills) Cross-cultural Understanding different paradigms) Collaboration, Teamwork and Leadership (skills in cooperation, teamwork and leadership) Communications, Information, and Media Literacy and media literacy Computing and ICT Literacy (computer skills and information and communication technology) and Career and Learning Skills (career skills and learning skills)[1]

Education is a social process of creating and developing people to have knowledge. Thoughts, behaviors and virtues enable them to live happily in society, which is in line with the 11th National Economic and Social Development Plan (2012-2016), has a focus note development of the country towards balance and sustainability begins with developing people to be strong and ready for future economic and social changes. By enhancing them to be physically and mentally
ready, healthy, strong, capable of thinking and analyzing. Creativity is ethical, knows one's own rights and duties, and respects the rights and duties of others, while strengthening the factors contributing to the development of the quality of people in society must be strengthened. Immune to various changes that will occur in the future. (National Economic and Social Development Council, 2012), which the guidelines are consistent with the policy of the Ministry of Education to develop the nation's youth into the 21st century world by aiming to encourage students, to be virtuous, love being Thai so that Real learning is in the real world or in real life. Studying subjects in the classroom is also fictitious learning. “So, teachers for students must have to design learning for students” to learn in conditions that are as close to real life as possible. Teachers for students must change the learning goals of students from focusing on studying subjects to gain knowledge. Let's move on to developing skills that are essential to life in the new era Emphasize that learning in the new era Must learn to create skills for students in the 21st century, which the duty of teachers for students must change from focusing on "teaching" or teaching to acting to spark interest in learning (inspire) to students, allowing students to learn by doing Practicing (learning by doing) and students cultivating skills for life in the 21st century by doing their work as a team with their fellow students. Emphasis on cultivating learning skills and search for knowledge more than knowledge Teachers for students have to change the way of working from being alone to working and learning from working as a team teacher. 21st century learning process.[4]

From the principles of the Ditching concept, design can be used as a guideline for creating innovations in nursing but found that there are gaps (gap of reasoning under knowledge. and nursing experience in decision making Methods for solving the problems of teaching and learning models based on the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation College of Management Innovation Rajamangala University of Technology Rattanakosin.

Therefore, studied the concept the theory that will be applied as a common fundamental idea Support in teaching and learning models based on the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. College of Management Innovation Rajamangala University of Technology Rattanakosin, which includes the reflective practice approach, reflecting on the practice of basic examination. Thoughts and self-reflection point of view and learn through action with reflection on act with criticism leading to action decisions and the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation.[5]

From past research studies No research has been found. about teaching and learning styles that promote competence in the creation of innovative thinking, reflection, and practice to promote competence. In creating innovation in educational management for students in the field of educational management innovation, there is interest in the development of teaching-learning models based on the concept of design thinking, together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. College of Management Innovation Rajamangala University of Technology Rattanakosin to develop a regenerating teaching model based on the design thinking concept together with the reflection of practice to promote The ability to innovate nursing directors of students in the field of educational administration innovation College of Management Innovation Rajamangala University of Technology Rattanakosin in order to obtain a
model of teaching regenerating with specific characteristics and procedures of rapu that encourages students to Has the ability to innovate nursing directors, including the knowledge gained from teaching and learning according to the learning model created by the researcher to achieve quality create value for the education administration profession as an upgrade to the standard and quality of nursing services to excellence and sustainability forever.

**Research objectives**

To develop a teaching and learning model based on the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. College of Management Innovation Rajamangala University of Technology Rattanakosin.

**Research conceptual framework**

The study came up with the principles of the Divinity tradition. design with the concept of reflection on practice to Develop a teaching and learning model based on the concept of design thinking. together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation College of Management Innovation Rajamangala University of Technology Rattanakosin as shown in picture 1.

**Important steps in design thinking learning management**

**STEP 1 Preparation** Teachers prepare to assign projects identified in the lesson plan. In class, the teacher may broaden the scope of the project. in accordance with the course or aptitude of students and prepare learning resources sample data as a guideline for students to study and research more You can use the website or moodle program to update the learning resources. and setting various appointments related to project implementation

**STEP 2 Thinking and choosing a topic** Let students be the makers of their own project design options. To provide opportunities to know how to research and create innovative knowledge Teachers may ask students to review relevant literature first. to guide the selection of topics. teamwork Stimulate brain storms to create skills. critical thinking skills communication skills and collaboration skills

**STEP 3 Writing an outline** Writing an outline of a project is to create a mind map showing concepts, plans, and steps of the project. To allow relevant parties to see the workload, role and duration of operations This makes the project more efficient.

**STEP 4 Implementation of the project** Students implement the plans laid out in the project outline. If the layout is already laid out Students will know for themselves what to do next. without having to ask the teacher During the course of the process, teachers may have close consultation or work together to solve problems with the students.

**STEP 5 Project Presentation** Students summarize the results. by writing a report or other forms of presentations such as brochures, posters for exhibitions Submission page reports via website or email If there is a contest or competition, the students will be more enthusiastic.
STEP 6 Project Evaluation Project assessments should include a variety of learning assessments, such as student’s self-assessment, evaluate each other third party assessment. Assessments do not only measure knowledge or final results, but will also measure the process of obtaining results. Assessment by multiple teachers will also create interaction and exchange between teachers.

Learning through activities (Activity-based Learning) In order to adhere to the principle that students create knowledge by themselves, “Child Centered”, learning by doing, learning by doing, and practicing for learning and problem solving. Doing by Learning is therefore led seriously used in the education reform of Thailand This kind of learning With the nickname "Teach less, learn a lot, Teach less. Learn More", learning by Doing uses "Activities" as the main teaching method by "Practice Doing" in every content. step of learning Its self-learning Everyone in the group is a practitioner. Teachers are mentors and trainers. But the activities used must be effective in learning the content. Purposeful, fun and interesting, not repetitive until boredom. Therefore, teachers are "Activity Designer Activity Designer" professional who can "visualize the activity" immediately.

Learning through problem solving (Problem-based Learning) is another learning style that focuses on the student center. and know how to work together as a team of learners in which teachers are less involved but are the most challenging to teachers. problem-based learning process Students will be organized into small groups of approximately 8 -10 people, with a teacher or instructor in the group 1 person acting as a learning support. (facilitator) consists of the following steps:

1. When students receive a problem Students will understand or clarify the words in the problem. to understand the same
2. Capturing important information points or identifying problems in the problem
3. Brainstorm to analyze the problem. Discuss an explanation What is the problem of each issue? how did this happen how it came to be by relying on the same knowledge as the learners have
4. Make assumptions to find answers to various issues. and rationally prioritize possible assumptions.
5. Based on the hypothesis Learners will assess what knowledge they have. Is there anything that is unknown or lacking in knowledge? And what knowledge is needed to prove a hypothesis? which is connected to the problem at this stage, the group defines a learning issue or learning objective to further research.
6. Research and study additional information from various learning resources such as textbooks, journals, teaching materials. laboratory study Computer-assisted teaching, the Internet, or consulting an expert teacher in a specific field and to assess the correctness
7. Use the information or knowledge acquired, synthesize, explain, prove hypotheses and apply them to suit the problem. with a summary of general concepts or principles
Steps 1-5 are the steps within the group process in the classroom. Step 6 is the activities of individual learners outside the classroom. And step 7 is the activity that comes back in the group process again.

Learning through scientific processes or research methods Research-based Learning Research-based learning is at the heart of graduate studies. Because it is a study that focuses on the pursuit of knowledge by the learners directly, is the development of the process of seeking knowledge and self-learning ability testing of learners. [7] proposed four research-based learning management models as follows:
1. Learning management using research processes is to allow students to practice doing research at various levels, such as conducting experiments in science laboratories. Case study, project work, document research, doing a mini research (Baby Research), doing a thesis, etc.

2. Teaching by having students join a research project with a teacher or as an assistant in a research project (Under Study Concept). In this case, the instructor must prepare a research project to support it. To provide students with the opportunity to conduct research such as collecting data, analyze data. However, there are disadvantages of this method as the students do not learn the entire research process.

3. Teaching by having students study research to learn knowledge Principles and theories used in research on that subject. How to set up a problem method for solving the problems, findings, and applying the results for further study. Make students understand the research process more.

4. Teaching using research results for teaching It is to let learners know that new knowledge theory How is your current science? It also builds trust in teachers and keeps teachers from getting bored of having to teach the same content every year.

**Research method**

Research on teaching-learning styles based on the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. College of Management Innovation Rajamangala University of Technology Rattanakosin the research was conducted in two steps as follows:

**Step 1: Study on the content of the theoretical concept documents.**

1.1 Study of related documents and research the researcher studied the documents and research related to the teaching and learning model based on the design thinking concept. together with the concept of reflection on practice to promote competence in order to create innovation in educational management for students in the field of educational management innovation, resources at this stage include documents, textbooks, articles, research papers, and electronic media both domestically and internationally. by analyzing and synthesizing and organized into categories

**Step 2. Field Study**

2.1 Interview with experts the researcher interviewed 7 experts on the issue of teaching-learning style based on the concept of design thinking, together with the concept of reflection on practice to promote competence To create innovation in educational management for students in the field of educational administration innovation.

2.2 A multi-case study of 3 model universities, the researcher studied multi-case studies (Multi-case Studies), a model university that received a Best practice award, educational management with a teaching and learning model based on the design thinking concept. together with the concept of reflection on practice from 2 universities and universities that use information technology and design thinking concepts together with the concept of reflection on the practice of 1 university

2.3 The researcher uses the results from the study of documents and related research on the teaching and learning model based on the concept of design thinking, together with the concept of reflection on practice to promote competence in creating innovation in educational management, students in the field of educational management innovation are synthesized to formulate strategies.

2.4 The researcher developed a teaching and learning model based on the concept of design thinking, together with the concept of reflection on practice to promote competence to create
innovation in educational management for students in the field of educational administration innovation. by using expert group meeting techniques

Step 3 Key Informants
3.1 Interviews with expert’s key informant Consisting of 7 qualified persons, obtained by selecting a specific (Purposive Sampling) as follows: Academics are those with a degree of not lower than a doctorate degree. Hold an academic position not lower than Associate Professor

3.2 Study the instructional model based on the design thinking concept from key informants in each school. Consisting of 3 university administrators and 1 head of the academic administration group, selected by specific method
3.3 Development of teaching and learning models based on the concept of design thinking by using the Experts Group Meeting technique. The key informants consisted of 9 experts, obtained by selecting a specific method (Purposive Sampling), consisting of 1 academician, 1 educational administrator, 1 administrator of the institution. The study consisted of 3 people, a supervisor of 1 and a teacher of 3 people.

Step 4 Tools and methods used in the study
4.1 Interviews, research tools It is a semi-structured interview format.
4.2 Multiple Studies research tools It is a semi-structured interview format.
4.3 Experts Group Meeting Tools used in research It is a model for assessing the consistency and conformity with what needs to be measured, i.e. IOC (Index of Items Objectives Congruence), a teaching style strategy based on the concept of design thinking.

Step 5 Gathering Information
5.1 Interviews, data collection the researcher coordinated with experts to inquire about their willingness and willingness to provide information for research purposes.
5.2 Data Collection Coordinate with the school director to request cooperation in research.
5.3 Experts Group Meeting Data collection by Experts Group Meeting from 9 experts

Step 6 Data Analysis
6.1 Interviews, data analysis the researcher used the information obtained from interviews and documents. Let’s analyze the content (Content Analysis) and categorize according to various issues. Then use the results obtained to create a conceptual framework of research.
6.2 Data analysis the researcher used data obtained from a multi-case study of the model school that received the Best practice award to analyze the content and categorize it according to various issues. Using statistics is the frequency value.
6.3 Experts Group Meeting Data Analysis The researcher used the data obtained from the expert group meeting. and the results of the assessment of conformity with the directness of the strategy are summarized, analyzed content and categorized according to various issues. Using statistics is the frequency value. and the determination of the conformity index (Index of Items Objectives Congruence: IOC) [7]

Step 7 Summary of research results and presentation of research results.
From the results of the study to the teaching and learning model based on the concept of design thinking together with the concept of reflection on practice.

Research results
It can be seen that curiosity learning and learning in the 21st century of instructional model based on the concept of design thinking. together with the concept of reflection on practice to
promote competence to create innovation in educational management for students in the field of educational administration innovation. The concepts and characteristics of learning management are similar, that is, there must be a relationship. There are sequential steps and processes. that learners can participate in teaching, such as defining problems that students are interested in group activities In order for learners to analyze and integrate with other subjects on their own, and effective teaching, teachers must have more qualifications than instructors. learning (Learning Coaching) and can act as a guide for students to travel to the world of learning (Learning Travel Agent), where the role of teachers from the past needs to change as we step into the 21st century of Teaching model based on the concept of design thinking together with the concept of reflection on practice to promote competence To create innovation in educational management for students in the field of educational administration innovation. Because teachers in the modern world need to be more knowledgeable than being a moderator of the subjects they teach. But the teacher has the role of raising the knowledge of the students. Build skills necessary for a career. Including ICT has played a role in education and is part of the daily life of people around the world. ICT today is not only a source of information. Teachers need to think about how to integrate learning management into ICT. The characteristics of teachers in the 21st century, known as e-Teachers, consist of 9 characteristics that teachers should practice as follows:[2]

1. Experience is a new learning experience. Use tools such as Internet, e-Mail, CD use
2. Extended means having the ability to search for knowledge all the time because of internet technology. Available 24 hours a day, anywhere, use your free time to gain knowledge with technology.
3. Expanded is to expand the effect of that knowledge to students. The general public and the community can transfer their knowledge on CD, VDO, TV or on the Web in order to increase the knowledge that is useful to the personnel as a whole.
4. Exploration is to be able to choose up-to-date content. References Researching both information and entertainment to create creativity to be used for teaching and learning design
5. Evaluation is to be a good evaluator. can use technology to evaluate
6. End-User is a good end user such as being able to browse valuable web sites on the Internet and being a user of various technologies.
7. Enabler is able to use technology to create lessons and additional content to use in teaching. Can use software and hardware to create lessons. At the very least, it is possible to create content presentations with Power Point to motivate students to learn more, or to use authoring tools to create electronic lessons.
8. Engagement is teachers who work together to exchange ideas and find common ground to create a community, such as discussing on the Web, creating new ideas, having suggestions, creating a community of teachers on the Web.
9. Efficient and Effective is an efficient and effective teacher. Must be a fluent technology user, producer, distributor and knowledge user.[5]

Good education for the new generation and quality would have to completely change the learning style of a disciple. And the role of the teacher had to change completely. teacher who loves students pay attention to the disciple But still using the same teaching methods, it will not be a teacher who truly benefits the students. That is, a teacher who has a heart for his students is not enough. Teachers for students need to shift their focus or focus from teaching. to focus on learning (Both students and their own) must learn and improve the learning style that they provide for students as well. Teachers for students must change their roles from “teacher” to “coach” or “learning facilitator” (Learning Facilitator) and must learn skills in performing duties. this by
joining together as a group to learn together in a systematic and continuous system called PLC (Professional Learning Community).[3]

**Discuss the results of the research.**

Instructional model based on the concept of design thinking together with the concept of reflection on practice to promote competence in creating innovation in educational management of students in the field of educational administration innovation consists strategies. The results of the research appear as follows. may be due to Creation and development of teaching and learning models based on the concept of design thinking has undergone a process of development and improvement from several steps, including the study of documents Related research, concepts, theories, interviews with experts. Multidisciplinary study and expert group meetings to get strategy Instructional model based on the concept of design thinking and indicators that are appropriate It can be used to effectively manage educational information and communication technologies for small primary schools. In line with the results of the [7] research, it was found that through a multi-stage research process, including surveying the problems, Study of documents and research interview with expert’s model school case study Expert Group Meeting This is the development of a strategy that creates a process of improvement and ensures that Strategies can be put to practical use. The results of the study consisted of issues that were discussed for each strategy as follows:

Instructional style strategy based on the concept of design thinking together with the concept of reflection on practice to promote competence In creating innovation in educational management for students in the field of educational administration innovation consists of: 1. Preparation of a plan to develop a system of teaching and learning models based on the concept of design thinking, together with the concept of reflection on practice to promote competence In creating innovation in educational management of students in the field of educational management innovation, in line with [4] studied the development of information and communication technology management strategies for school education. Under the Education Service Area Office Bangkok found that internal structure management strategies It consists of secondary strategies and activities such as strategies for system development and system administration to support the use of ICT for education. It is a clear internal structure. Activities include expedite all parts to prepare a management plan There is a system for continuous monitoring of ICT operations. Promote the use of ICT for communication within the school There is regular communication within the school regarding ICT policies. There is a system of budgeting according to the school's plan. Encourage the presence of ICT departments in schools and encourage ICT activities to support teaching and learning activities thoroughly.

**Conclude**

Instructional model based on the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. It consists of teaching strategies based on design thinking concepts. together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. It has gone through a process of development and improvement from several steps. thus, having confidence that the strategy Project/Activity and indicators that are appropriate It can be used to effectively manage information and communication technology for education for small primary schools.
Feedback

From research results the researcher has the following suggestions:

1. Recommendations from research

1. The results of the development of teaching-learning strategies based on the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management for students in the field of educational administration innovation. College of Management Innovation Rajamangala University of Technology Rattanakosin is suitable. It can be used to manage information and communication technology to be effective.

2. Suggestions for the next research

For the next research issue, research should be done on the issue of

1. Study the teaching style according to the concept of design thinking together with the concept of reflection on practice to promote competence to create innovation in educational management of students in the field of educational management innovation, College of Management Innovation Rajamangala University of Technology Rattanakosin to the real practice.

References


