Models and Model Development through Research in Educational Administration

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ABSTRACT

A model is a technical term used to represent a theoretical concept or practical work design that aims to improve operational effectiveness. While a theory or work design itself may not inherently qualify as a model, but its structure and content can be developed into theoretical or work-design models, much like versions of computer applications. Therefore, when discussing model development, mostly it pertains to the process of developing a theory or work design. However, this paper will predominantly focus on the development of work-design models rather than theoretical models. It aims to cover the fundamental concepts of models, model development, model verification, and conclusion. As result, the paper covers the fundamental concepts of models, which is divided into two main sub-topics, namely model definitions and components of work-design models. The second main topic is model development through research, which is discussed on approaches and research designs on model development. The last topic proposes how the models are evaluated. The findings shall be presented as follow.

Keywords: model; model development; research; educational administration

รูปแบบและการพัฒนารูปแบบโดยการวิจัยในการบริหารการศึกษา

สมาน อัศวภูมิ

สาขาวิชาบริหารการศึกษา คณะครุศาสตร์และการพัฒนามนุษย์ มหาวิทยาลัยราชภัฏศรีสะเกษ

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บทคัดย่อ

รูปแบบเป็นศัพท์เทคนิคที่ใช้เป็นสื่อกลางแทนมโนทัศน์เชิงทฤษฎี หรือการออกแบบวิธีการปฏิบัติงานที่มุ่งยกระดับประสิทธิผลการปฏิบัติการอย่างใดอย่างหนึ่ง ขณะที่ตัวทฤษฎี หรือวิธีปฏิบัติงานเหล่านั้นอาจจะไม่เป็นรูปแบบด้วยตัวเอง แต่โดยโครงสร้างของแนวคิดของทฤษฎีหรือวิธี การปฏิบัติงานเหล่านั้นก็จะสามารถพัฒนาต่อให้เป็นรูปแบบเชิงทฤษฎี หรือการปฏิบัติงานได้ คล้ายกับโปรแกรมใช้งานของเวอร์ชันคอมพิวเตอร์รุ่นต่างๆ นั่นเอง ดังนั้นเมื่อกล่าวถึงการพัฒนารูปแบบก็จะหมายถึงการพัฒนาตัวแบบเชิงทฤษฎี หรือวิธีการปฏิบัติงาน อย่างไรก็ตามบทความนี้มุ่งนเสนอแนวคิดเกี่ยวกับการพัฒนารูปแบบการปฏิบัติงานมากกว่ารูปแบบเชิงทฤษฎี โดยบทความนี้มุ่งศึกษาแนวคิดพื้นฐานเกี่ยวกับรูปแบบ การพัฒนารูปแบบ การตรวจสอบรูปแบบ และบทสรุป ผลการศึกษาที่ปรากฏในบทความนี้ประกอบด้วยเนื้อหาหลักดังนี้ เรื่องแรกคือแนวคิดพื้นฐานเกี่ยวกับรูปแบบ ซึ่งมีสองประเด็นย่อยคือความหมายและองค์ประกอบของรูปแบบ เรื่องที่สองเกี่ยวกับการพัฒนารูปแบบโดยวิธีการวิจัย ซึ่งแบ่งเป็นสองส่วนย่อยคือวิถีทัศน์ในการวิจัย และการออกแบบการวิจัย ส่วนเรื่องสุดท้ายคือการประเมินรูปแบบ ซึ่งจะนำเสนอแนวทางในการประเมินรูปแบบ รายละเอียดของสาระทั้งหมดจะได้นำเสนอต่อไป

คำสำคัญ: รูปแบบ; การพัฒนารูปแบบ; การวิจัย; การบริหารการศึกษา

INTRODUCTION TO MODEL AND MODEL DEVELOPMENT

When I was a graduate student at Chulalongkorn University in Thailand in the 1990s, the word "model" was adopted as a policy for conducting dissertations within the department. This policy stated that doctoral candidates were required to propose their own models as the final products of their dissertation. However, at that time, the word "model" was not yet well-defined or understood.

After reviewing the literature, I (Saman Asawapoom, 1994) identified four types of models: a simplified model of a thing, a mathematical model, a theoretical model, and a work-designed model. A simplified model of a thing refers to a prototype or scaled-down version of something, such as a building or an airplane. A mathematical model uses numbers and mathematical concepts to propose a formula or relationship. A theoretical model consists of concepts that are proposed to describe or explain a phenomenon. Lastly, a work-designed model involves systematic design on how work or tasks should be more effectively operated.

In my dissertation, I provided an example of a work-designed model, specifically focusing on the organization and management of primary education at the provincial level. It has now been almost thirty years since this research was conducted, and while the concepts and types of models remain the same, the processes of building models have undergone significant revisions and improvements. This article serves as an update on the concept of models and research designs, specifically focusing on how a work-designed model is constructed.

As mentioned in the abstract, the objectives of this article were to review and revise the concept of model and model building. The findings would be presented in five sections: Introduction, fundamental concepts on models, model development through research, and model evaluation, and conclusion.

FUNDAMENTAL CONCEPTS OF MODELS

Two things must be understood about models for those who wish to create and utilize them: model definition and model components. The fundamental concepts of both will be reviewed and summarized as follows.

MODEL DEFINITION

As mentioned above, models can be classified into four types: a simplified model of a thing, a mathematical model, a theoretical model, and a work-designed model. However, different authors or academics may define and describe "model" differently. For the purposes of this article, we will only review definitions related to theoretical and work-designed models. While the main focus of this article is on work-designed models, it is important to note that these two concepts are closely related and support one another in understanding their concepts and applications, as will be discussed in the following paragraphs.

Both concepts of models, theoretical models, and work-designed models, were pointed out by Bordens and Abbotts (2002). Firstly, they stated that a theoretical model explains how things happen, such as the Conditional Stimulus theory proposed by Rescorla and Wangner (cited in Bordens and Abbotts, 2002), which is a theory on conditional stimulus that can be tested with empirical data. Secondly, Bordens and Abbotts also pointed out that there is another type of model that refers to the application of theory in work situations, as an instrument or a means to solve problems or run an organization. This is similar to what I referred to as a "work-designed model" in my doctoral dissertation in 1994 (Saman Asawapoom, 1994).

In the past, theoretical models were the main focus of academic work, even though those theorists did not specifically label their works or theories as "models." However, each theory represented a model of thought, such as Maslow's need hierarchy model (cited in Gibson, Ivancevich, & Donnelly, 1994), Herzberg's Two-Factor Theory (cited in Gordon, 1996), or Senge's Learning Organization (Senge, 1990). However, when Deming (cited in Worapat Phoochareon, 2016) proposed the Quality Cycle as a process to improve organizational quality, even though he didn't refer to his work as a "Quality Improvement Model," it can be considered a work-designed model. The Quality Cycle, or PDCA (Plan, Do, Check, Act), serves as a guide for administrators and employees to improve product quality.

When I was working on my dissertation, I initially planned to propose a theoretical model. However, as I reviewed the concept further, I realized that there were already numerous theories on administration, but not many practical applications of these theories. Fortunately, during my time as a Fulbright visiting scholar at New York State University at Buffalo (SUNY), I came across a dissertation by Acree (1974) titled "Development of A Model to Link State Education Agencies and Local Education Agencies in Policy Formulation," which presented a work-designed model. The concept and research design aligned with my interests, so I decided to conduct my dissertation using a similar approach as Acree's model.

At the time I was conducting my dissertation, there were only a few references available on the subject. However, in recent years, more and more work-designed models have been developed, and definitions of the concept have been established as outlined below.

According to Acree (1974), a model is a systematic representation of the relationships that define a specific situation under study. It can take various forms, including mathematical equations, computer programs, verbal statements, or physical objects. Models provide a framework for manipulating variables to determine how a process, object, or concept would function in different situations.

Assen, Berg, and Pietersma (2009), in their book preface on management models, describe them as work guidelines designed to facilitate effective and efficient working or problem-solving. However, they caution that models do not guarantee definite success. Similarly, Joyce and Calhoun (2010) stated in their book that educational models represent forms or patterns of how things should ideally be done, but they are not the only methods or strategies available. Models are based on states and problems gathered for their development.

Lambert (1996) emphasized the importance of models in operating modern businesses. While he acknowledges the difficulty in defining models, he suggests that they are sets of guidelines for optimal work processes within organizations. Lambert believes that good models should enable managers to obtain useful data or ideas for improving their work, help them decide what is applicable and helpful for their business, provide a framework for further work, and suggest proven processes for carrying out work.

In summary, models are valuable tools for both research and practical applications. They offer systematic representations of relationships in a specific situation, guide effective and efficient working or problem-solving, and provide frameworks for optimal work processes within organizations.

Saman Asawapoom (2018) summarized the concept of a model as follows: (1) Models are simplified forms of theories, practice guidelines, or artifacts, (2) When presenting a model, the developer must select the most crucial components or elements necessary to comprehend and implement the model, and (3) Most models indicate their objectives through their names, but it would be helpful to explicitly state the model's objective(s).

Additionally, including success conditions and model evaluation guidelines in the model presentation is beneficial.

Considering the definitions and concepts discussed above, a work-designed model can be seen as a simplified prototype of a systematic design for improving work effectiveness. The model presentation should define the essential components of work design and provide guidelines for users to implement the model and achieve its objective(s). It is important to acknowledge that models have limitations, so suggesting success conditions and providing model evaluation criteria and guidelines is crucial. Additionally, sound principles or theories should be the foundation upon which good models are developed. However, the process of developing and reporting a model will be discussed in later sections.

COMPONENTS OF WORK-ESIGN MODELS

In my experience conducting research on model building as both a graduate student and a dissertation advisor for over 20 years, I have observed that students often confuse model components with components of a model report format. This confusion arises because components form the building blocks of any constructed scheme of thought, whether it is a proposed theory, model, or format for presenting work. Therefore, it is important to differentiate between model components, which are crucial variables forming parts of a proposed model, and model report components, which are subsections of a model report's contents. However, it is worth noting that model components may also be included as subsections within a model report. In this section, I will provide various styles for reporting a model as a guideline for writing a model report.

GENERAL MODEL-REPORT FORMAT

When the writers discussed models in their books (Lambert, 1993; Assen, Berg, & Pietersma, 2009), they typically presented the models in three main sections: (1) the rationale for using a model and the underlying assumptions or theories, (2) the visual representation or structure of the model, and (3) the practical application of the model. From this viewpoint, it can be suggested that a general model-report format consist of three essential components: Model Objectives and Supported Theories, Model Components, and Model Application.

ACREE'S MODEL COMPONENTS

The purpose of Acree's doctoral dissertation was to devise a model that would systematically link a SEA with a LEA in the formulation of policies (Acree, 1972). The model components represented the necessary systematic linkages to facilitate cooperation between officials from both agencies in the policy formulation process. The research results revealed three components: (1) a general model of the policy formation system, (2) a process for formulating policies, and (3) the participants responsible for policy formulation. The general model and the process of formulating policies were designed specifically for each level, and the participants included officials from both the SEA and the LEA.

The limitations of the model, both in its development and utilization, were discussed at the end of the report. The model was verified by experts from various educational organizations through model reviewing and confirmation letters. While the report only covered the three main components of the model, namely, the general model of policy formulation system, the process of formulating policies, and the participants responsible for policy formulation, however, the model objective was included in the research objective, and limitations of the model were defined and discussed. In addition to that, the evaluation of the model, which could be measured against its objective, was not presented in the model report. Acree's research report covered the following chapters.

Chapter One: Rationale for the Study, which included the Introduction, Statement of the Problem, Purpose of the Study (also the objective of the model), Significance of the Study, Operational Definition of Terms, and Organization of the Study.

Chapter Two: Literature Review, which should identify fundamental principles or theories of the model, as well as related concepts relevant to the study.

Chapter Three: Research Design, which focused on how fundamental principles, data, and information were gathered and used to develop the model, as well as how the model would be developed, verified, or evaluated.

Chapter Four: Research Results, which reported the fundamental principles, theories, and data or information used to form the model. This chapter also presented the model itself, explains how the model was verified, evaluated, or confirmed, and discussed the limitations or success conditions for the model.

Chapter Five: Conclusion, Discussion, and Implications, which included the conclusion of the research results, discussion on important issues learned from the study, and suggestions on how to use the research findings. It also suggested topics or areas that might be useful for conducting future research.

SAMAN ASAWAPOOM'S MODEL COMPONENTS

During conducting research for my doctoral degree dissertation (Saman Asawapoom, 1994), I found only one sample of this type of research: Acree's dissertation mentioned above (Acree, 1974). I am grateful to the graduate school of Chulalongkorn University and the faculty at the Department of Educational Administration for granting me permission to conduct my dissertation (Saman Asawapoom, 1994). After reviewing more concepts on model building, I designed the research by applying Acree's concept and reviewed additional concepts under the advice of my advisors. The main research objective was to develop appropriate models for Primary Education Administration at the Provincial Level (Saman Asawapoom, 1994). The research process consisted of four steps: (1) Analysis of Principles and Fundamental Data for Model Development, (2) Drafting the Model, (3) Gathering Experts' Feedback on the Model, and (4) The Final Model Revision. The main components of the model included three elements: (1) The Model Principles, (2) General Structure of Provincial Education Organization, and (3) Guidelines on Administrative Tasks, which could be summarized as follow.

The Model Principles present the names and concepts of the fundamental principles used for the development of the models.

The General Structure of Provincial Education Organization covers an organizational structure chart of the education organization at the provincial level, along with a description.

The Guidelines on Administrative Tasks are divided into five tasks: Policy and Planning, Academic Administration, Personnel Administration, Budget and Material Administration, and Quality Standard and Administration. Guidelines for each task administration are provided.

When I was conducting research on model development as my dissertation, evaluation of the model was not initially included as part of the model components. However, I sought opinions from experts to revise the model. In subsequent writings, I incorporated evaluation and success conditions into the model components. Further details will be discussed in the following section.

ALTERNATIVE MODEL COMPONENTS

A few years after graduating with my Ph.D., I was invited to join a team working on the development of graduate education curriculum, starting with Master's programs and later moving on to Doctoral programs. My main responsibility was to assist students working on model development. This prompted me to reflect on my experiences during my own model

development research as a Ph.D. candidate. After gaining more experience and researching further on the topic, I decided to write two articles. Although both papers revolve around the same core concept - the combination of model components and model report components into a cohesive piece of work - they propose different solutions.

In the first article (Saman Asawapoom, 2007), I suggested that the Model Components should consist of the Model Objective, Model Principle, Model Mechanism, Model Process, Model Evaluation Guidelines, and Model Success Condition. Upon examining these suggested components more closely, it becomes evident that components one, two, five, and six are complementary features that contribute to a comprehensive model report. On the other hand, components three and four - Model Mechanism and Model Process - are the main components of the model that encompass the objectives the model aims to achieve.

After implementing this concept for a few years, it became apparent that some models exclusively consisted of processes while others only focused on mechanisms. This led to confusion among researchers. As a result, I wrote another article (Saman Asawapoom, 2018) suggesting the fusion of Model Mechanism and Model Process into one component called Model Main Component. This new component can encompass both Model Mechanism and Model Process or only one of the two, providing more clarity for researchers. Therefore, the alternative model components are:

1. Model Objective: The statement indicates the intended achievements of the model, such as solving problems or providing guidance on how things should be done.
2. Model Principles: These are the fundamental principles or theories that serve as the foundation or pillars of the model.
3. Model Main Components: This refers to a set of systematically designed and aligned sub-components that together compose the model and help achieve its objective. The model may consist of working processes or a working system that guides how tasks or work should be performed more effectively.
4. Model Result Evaluation: This includes guidelines and criteria used to assess the model's performance against its objective.
5. Model Success Conditions: These highlight important conditions that are crucial to facilitate or enhance the success of the model.

As mentioned above, the main component of any model is its working processes or system, which is believed to enhance work achievement. However, a model must be created with a specific objective in mind. It should be developed based on principles or theories, and there should be guidelines in place to measure and justify the model's effectiveness. Lastly, success conditions for implementing the model should be provided.

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MODEL DEVELOMENT THROUGH RESEARCH

Development of a model through research is one of the best processes because research is a systematic and scientific method to discover new knowledge or answer questions. However, in my experience, more practical research designs can be done through two approaches: Model Embedded Approach and Model Product Approach, and three research designs: Multi-phases Research Design, Research and Development Design, and Action Research Design (Saman Asawapoom, 2023).

MODEL DEVELOPMENT APPROACHES

Model development approaches in this paper refer to the development of a model through research, as mentioned above. The first approach is called the 'Model Embedded Approach' because it embeds the intended model in the research processes. Examples of this approach can be seen in my dissertation (Saman Asawapoom, 1994) and Acree's dissertation

(Acree, 1974). The other approach is the Model Product Approach, which signifies that the model is a product of the research. More details of each approach are as follows.

MODEL EMBEDDED APPROACH

The research designs conducted by Acree and Saman Asawapoom, mentioned above, are examples of the Model Embedded Approach. This approach involves embedding parts of the model-report format features or components within the research design and report. The researcher states the research purpose or main objective, which includes the intent of the model. For example, Acree's dissertation had the research purpose of "To devise a model for the development of systematic procedures to link a SEA with a LEA in the formulation of policies" (Acree, 1974), and Saman Asawapoom's dissertation main objective was "To develop appropriate models for Primary Education Administration at Provincial Level" (Saman Asawapoom, 1994).

The principles and theories used as the foundation of model development were revised and discussed in the literature review, as mentioned before when reporting the main component of the model (Acree, 1974). These principles and theories might also be embedded in the model itself, as seen in Saman Asawapoom's dissertation (Saman Asawapoom, 1994). However, both authors of those dissertations did not provide a guideline for evaluating the implementation of the model, which should be added in a detailed discussion of the model description. While Acree mentioned the conditions for successful model implementation in the model discussion section, Saman Asawapoom did not include them in the model.

My recommendation is that researchers should mention model evaluation and conditions for successful implementation in the model discussion section, if they are not included in the model itself.

When planning a research design, the researcher should provide an explanation of how the model was developed, leading to the research results presented in the fourth chapter. If the model is developed based on certain principles or theories, the author should explain how those principles or theories were used in creating the model. Additionally, if the creation of the model required additional information or data, it should be presented in the third chapter, which covers the research design. The fourth chapter should focus on the main component of the model, including any sub-components or features, with detailed descriptions of each. In addition to discussing the main component and its sub-components, there should be a section on model discussion, which should address why the model was created in a particular way, what the success factors or conditions for implementation are, and how the implementation results should be measured and evaluated.

The final chapter, title “Research Summary, Discussion, and Implementation”, should include a summary of the research results, discussions on important issues related to the results based on the researchers' experiences, principles, theories, or past research findings. Additionally, the researchers should suggest how the research results should be utilized and provide any suggestions for further research.

The research examples mentioned above used a general applied research design. However, the researcher can choose from different designs, such as Multi-phases Design, Research and Development Design, or Action Research Design. Nonetheless, the researcher must include the model objective in the research objective, discuss the principles or theories used for model development in the literature review, and only report the main components of the model. These are key distinguishing characteristics between the Model Embedded Approach and the Model Product Approach, which will be presented in the next section.

MODEL PROCUCT APPROACH

The model product approach separates the model, which is the end-product of the research, from the research design chosen as a means to create the model (Saman Asawapoom, 2007; 2018). When using this approach, the researcher must decide in advance how the model will be reported, thus a model-report format must be determined ahead of time. This is why I proposed the alternative model components in the previous section. If one chooses this approach, the research should be conducted as follows:

Firstly, the researcher must decide which research design to use. There are three suggested designs in the next section to choose from.

Secondly, the researcher must decide on a format for the model report. The alternative model components proposed earlier, including Model Objective, Model Principle, Model Main Component, Model Implemented Evaluation, and Model Success Condition, can be used.

Thirdly, when planning a research design, the researcher must always remember that the design is a means to create a model, and the model product must be developed and presented using the five Model Components mentioned earlier if the alternative model component is chosen. For example, if the researcher decides to use the Multi-phases Research Design, the research plan might look something like this:

Phase One: Investigation of Fundamental Information, which can be divided into two steps: Need Assessment and Recommendations for Model Creation.

1.1 Need Assessment: The researcher can implement various methods to obtain needs on each sub-component of the model main component for model creation. The sub-components of the model are derived from the literature review on the model to be created. The clearer and more focused the sub-components are, the better the model will be.

1.2 Recommendations for Model Creation: The research should seek recommendations on how the model should be created, relating to the five model components mentioned above, based on the needs obtained from Step 1.1. This can be done through structured interviews with experts, samples of people who are the target group for using the model, or best practice cases. From this research activity, the researcher may gain some ideas to write the first draft of the model.

Phase Two: Model Drafting and Revising involves three steps: Model Drafting, Model Examining, and Model Revising.

2.1 Model Drafting: The researcher creates a model with five components, taking into account recommendations and needs identified in the first phase and referencing theoretical literature. If the researcher is a student, they may work on the model under the supervision of research advisers.

2.2 Model Examining: The researcher collects additional information necessary for revising the model. This may involve conducting surveys, correcting focus group data, or conducting expert interviews. The sample or target group for the model examination can include people who will use the model, experts in the field, or a mixed group.

2.3 Model Revising: The researcher uses the information obtained in Step 2.2 and reviews the literature to make revisions to all aspects of the model components.

Phase Three: Model Evaluation allows the researcher to evaluate the model using one or a combination of the following methods: Connoisseurship, Experts or Users Judgement, Implementing the Model, or Combination Methods. More details about each technique will be presented in the section on model evaluation.

MODEL DEVELOPMENT RESEARCH DESIGNS

Research design in this article refers to how the research is planned and conducted in order to reach its goal, while research approach refers to the paradigm that guides the design of the research. Therefore, all selected research designs below could be used for research design in any of the approaches mentioned above- Model Embedded Approach and Model Product Approach. However, a researcher must first decide which approach to use before determining the research design. This is because each approach will affect the research design differently, as will be described in the following sub-sections.

MULTI-PHASE RESEARCH DESIGN

The Multi-phase Research Design is designed to divide research activities into phases, each of which consists of sub-activities. The number of phases included in a particular design depends on how the researcher wants to conduct the research. For example, a design with three phases might include (1) Need Investigation, (2) Drafting and Revising the Model, and (3) Model Evaluation, while a design with four phases might utilize the concept of product development. In the four-phase design, the researcher should consider (1) Need Investigation, (2) Drafting and Revising the Model, (3) Model Implementation, and (4) Model Evaluation.

To determine how each research activity should be conducted, the researcher can draw from any research methodology found in most research textbooks (e.g., McMillan & Schumacher, 2010; Ary, Jacob, & Sorensen, 2010; Fraenkel & Wallen, 2006). Furthermore, the specific approach may depend on the complexity of the model and whether the research is being conducted under the guidance of research advisors or as part of a funding project. If the research is conducted under advisement, the researcher must consult with their advisors to gather the necessary fundamental data. In the case of funding projects, the researcher must defend the proposal to the funding committee. An example of this design is presented in the section on the Model Product Approach above. Alternatively, a model may be constructed solely using theories as the basis for formulation. In this case, the research design might include Phase One - Model Concept Review, Phase Two - Model Creation Based on Theories, and Phase Three - Model Evaluation. Documentary or Library Research can be used for the first phase, the Focus Group Technique can be employed for model creation, and Model Evaluation by Connoisseurship can be applied for model evaluation.

RESEARCH AND DEVELOPMENT DESIGN

Research and development (R&D) is the process of researching consumer needs and developing products to meet those needs (Gay, Mills, & Airasian, 2011; Postholm, 2019). Postholm prefers the term Development Work Research (DWR) over R&D due to the researcher typically developing a product based on theory before implementing it in the workplace. However, if we consider researching documents as part of the research process, then research is actually conducted before product development, making it R&D as well. In the field of education, R&D research design aims to develop innovations such as training packages, media materials, or management models, rather than formulate or test theories. Therefore, I propose this as one of the research designs for model development. R&D research design can be time-consuming and requires effort to complete. After the product is created, it needs to be field-tested and revised until it achieves its objective. If a graduate student chooses to apply this design, they should consider how the model will be field-tested and the number of R&D cycles required to satisfy advisors and meet institutional standards. The basic process of R&D involves a series of research activities (R) and product development (D), following a pattern such as R1 to D1, then R2 to D2, and so on. In a work setting, R&D may continue until the product achieves its objectives. However, in the context

of graduate studies or funded research, the R&D cycle depends on the requirements or standards set by the institution or funding agency. funding ag

ACTION RESEARCH DESIGN

Action research is a practical research design suitable for work-design or product development, particularly in real work situations. The concept and practice of Action Research were introduced by Kurt Lewin, who is considered the first academic to invent this approach (McTaggart, 1997; McMillan & Schumacher, 2010; Suwimol Wongwanich, 2011). The basic concept of action research involves following a spiral of steps, which include planning, acting, observing, and evaluating the results of implementing the plan. Since action research focuses on investigating specific contexts, such as classrooms or educational institutions, it is most suitable for teachers, groups of teachers, or administrators to apply this design when solving practice problems or finding new ways to improve their work. The end result might be in the form of a product or model. I do not recommend using action research for graduate theses or dissertations unless the institution allows students to apply this method in their own workplaces. Examples of action research processes may include steps such as selecting a focus to study, collecting data, analyzing data, and taking action based on the results (McMillan & Schumacher, 5210). Another approach could involve identifying an area of focus, collecting data, analyzing and interpreting the data, and developing an action plan. However, based on the concept mentioned above, I propose that the action research process should be a continuous spiral cycle consisting of the following steps: (1) Reflecting on experiences, or reading (2) Creating an action plan based on experiences and further reviewed literature, (3) Implementing the plan and collecting data, and (4) Learning lessons from the implementation, which will lead to a renewal of the process.

MODEL EVALUATION

Model evaluation is an important step for model development through research although it does not guarantee the quality of the model, but at least it provides some evidences to justify the model. The evaluation could be done in any techniques of the four that Saman Asawpoom (2018) suggested as follow.

CONNOISSEURSHIP

Originally used to judge the quality of wine by experienced drinkers or experts, connoisseurship is now applied by social science academics to evaluate academic work. This method can be applied to model evaluation through panel judgment of experts or users, or a combination of both. Information for model evaluation can be gathered through panel consensus or rating forms. Given the nature of connoisseurship, the expertise of the judges is more important than the number of judges. However, for academic purposes, I recommend using either a group of 9-12 individuals based on focus group suggestions, or a group of 17-21 individuals based on the Delphi Technique.

EXPERTS OR USERS JUDGEMENT

Similar to connoisseurship, experts or users judgment involves surveying the opinions of experts or users to evaluate the model. If the researcher evaluates the model using only experts, the number of judges should be the same as in connoisseurship. However, if the researcher uses only users, the number and method should be the same as in survey research.

IMPLEMENTING THE MODEL

Implementing the model to evaluate its functionality is an ideal approach, but it is rarely executed due to the abstract and complex nature of the model. Additionally, this implementation process can be time-consuming. However, I propose designing a limited or

practical version of the model that can be implemented within a manageable timeframe, possibly employing a Pseudo Experiment design. Although the experimental results may not provide a comprehensive evaluation of the entire model, they will provide insights into its workings.

COMBINATION METHODS

Another option to enhance the model evaluation is employing combination methods, although this requires additional effort. However, it is important to note that there is no guarantee that the model will work in real-world scenarios. Despite this, thorough and carefully designed model evaluations are essential. One way to carry out data collection for evaluating the model using combination methods is to combine implementing the model with expert judgment. The researcher could begin with a Pseudo Experiment and then use the experiment findings as part of the expert judgment. Alternatively, both methods could be conducted separately, with the evaluation results reported for each method.

CONCLUSION AND IMPLICATION

Seeking new knowledge and working methods is the most powerful skill possessed by human beings, leading us to the world in which we live today. Model development offers an alternative for seeking new approaches to enhance work productivity and achieve effective results. Since graduating in 1994, model development has been the focus of my life. This article, titled "work-design model," is a summary of my experiences in this field. The two approaches and three research designs suggested above are essential lessons for anyone wishing to develop a model. However, I highly recommend experimenting with these concepts in real-life situations and sharing your experiences with others to enrich the available alternatives. For those who intend to utilize these concepts in their graduate work, kindly ensure that they meet the standards set by your institution and advisors.

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