

# BASIC THINKING SYSTEM

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Thinking systematically (systematic thinking), means thinking about everything based on a certain method framework, there is a sequence and decision-making process. This requires obedience and discipline to the process and method to be used. Different methods of thinking will lead to different conclusions, but all of them can be accounted for because they are in accordance with a widely recognized process. The method used to obtain the data needed in this discussion is the Library Research method. The result is that to realize various scientific activities, scientific language is needed with its main elements, namely: concepts / concepts (symbols used to interpret phenomena), propositions (a statement (statement) about the nature of phenomena), theories / theories (a system of propositions). postulates or an integrated set of propositions), models (assembling a set of postulates or forming a system of propositions) and paradigms (sets of assumptions, both expressed and implied, that form the basis for scientific ideas)

**Keywords:** *Basic, Thinking, Systemic*

## INTRODUCTION

Systemic thinking is a way to understand complex systems by analyzing the parts of the system to then find out the pattern of relationships contained in each element or elements that make up the system. In principle, systemic thinking combines two thinking skills, namely the ability to think analytically and think synthetically.

There are several terms that we often encounter that have similarities with systemic thinking (systemic thinking), namely Systematic thinking (systematic thinking), Systemic thinking (systemic thinking), and Systems thinking (all-systems thinking). If examined, then all the terms are rooted from the same word, namely "system" and "think", but show different connotations, because they have different goals.

The concept of the system at least concerns the understanding of the existence of elements or elements that form a unity, then there are attributes that bind them, namely a common goal. Therefore, each element relates to each other (relationship) based on a mutually agreed rule of the game. Unity between elements (system) that has a boundary (boundary) that separates and distinguishes it from other systems around it.

Thinking systematically (systematic thinking), means thinking about everything based on a certain method framework, there is a sequence and decision-making process. This requires obedience and discipline to the process and method to be used. Different methods of thinking will lead to different conclusions, but all of them can be accounted for because they are in accordance with a widely recognized process.

Systemic thinking means looking for and seeing that everything has an orderly pattern and works as a system. For example, if we look at the brain, we can imagine the nervous system in the human or animal body. When we see the heart will fall

While the circulatory system throughout the body. Meanwhile, systemic thinking (systemic thinking) is realizing that everything interacts with other things around it, even though formally-procedurally it may not be directly related or spatially outside a certain environment. Systemic thinking emphasizes the awareness that everything is related in a series of systems. This way of thinking is the opposite of fragmented-linear-cartesian thinking.

Systemic thinking combines analytical thinking (the ability to parse the elements of a problem) with synthetical thinking (combining these elements into a single unit). We have to understand and finally integrate these two basic skills: doing Analysis and Synthesis. Analysis is a tool to understand the elements of a problem. For example, why do floods and landslides occur in an area? So, we need to examine: waterways, soil conditions, river flows, mountain or forest conditions upstream, and rainfall that occurs.

After that, we carry out synthesis, which is the process of understanding how the elements function together. Here we are required to understand these elements fundamentally before combining them. We can see a clear relationship between high rainfall and barren

forest or mountain conditions, causing very heavy river flows and finally

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water (floods) and the soil conditions are prone to causing landslides.

In the interaction between these elements we understand that everything is part of a system, in other words everything interacts with each other. There is no thing on this earth that stands alone, because everything is interrelated. Understanding the process of this interaction is difficult because apart from the many variations, sometimes it is also invisible, and they influence each other, so it is not clear which factor came first.

We need patterns of interaction between elements in a System. It is easier to understand how a system works at the pattern level, not at the details. If we want to understand the forest, then we look at it as a whole, not looking at the trees one by one. Systems thinking is a way for us to find patterns consciously and proactively.

In a complex problem, we need a different systemic way of thinking from the conventional way. There are two steps in applying systemic thinking. First, we list and find the elements of the problem. Second, find a general theme or pattern. This is very different from those who apply non-systemic thinking, because they may find and list a number of elements of the problem, but then choose certain elements to be the focus of attention. In that case, they ignore other elements that are seen as insignificant, even though they may actually determine the pattern that develops in the system.

*systems thinking* slightly different systemic thinking. Systemic thinking emphasizes more on finding patterns of relationships (Pattern), then all-systems thinking emphasizes on understanding how (How) the elements are related. With this understanding of How, we can find which elements have a vital impact and a comprehensive solution, so as not to cause new problems.

The all-systems way of thinking will also form a systemic attitude in responding to problems (systemic attitude), which is a pattern of behavior that does not violate the rules of the game that have been agreed upon in a particular system. A rule set in the system is indeed self-constraining, but at the same time it is self-enabling for each element to work according to its function and interact with other elements. If

there are no clear functional boundaries, then each of these elements will collide with each other and even potentially destroy the system as a whole. This is where the importance of thinking and acting all-systems in order to maintain the continuity of the system itself. Changing the rules of the game is possible and can be fought for through legal-rational means,

To realize various scientific activities, scientific language is needed. There are main elements of scientific language (To realize various scientific activities, scientific language is needed. There are main elements of scientific language) (Philips, 1971). Namely: paradigms, concepts, propositions and theories (paradigms, concepts, propositions and theories)

In the syllabus of the Systemic Thinking Lecture for the Islamic Education Doctoral Program, TP. 2019/2020 UIN SU with Lecturers: Dr. Candra Wijaya, M.Pd, Dr. Mardianto, M.Pd, Dr. Mesiono, M.Pd and Dr. Neliwati, M.Pd, in the subject: The basics of systemic thinking with sub-discussions: concepts, propositions, models and paradigms.

In this article, we will describe in accordance with the syllabus of the Systemic Thinking Lecture for the Islamic Education Doctoral Program Tp. 2019/2020 UIN SU, namely: The basic foundation of systemic thinking with sub-discussions: concepts, propositions, models and paradigms.

The means of scientific thinking are used as a tool for branches of knowledge to develop their knowledge material based on scientific methods. While the function of the means of scientific thinking is to assist the process of the scientific method, both deductively and inductively (UGM, 1996)

This discussion also chooses the library research method. Literature research is research that is carried out using literature (library), either in the form of books, notes, or reports on the results of previous research.(Hasan, 2008).In this discussion, the author focuses on several things, namely 1) What is the concept of systemic thinking?, 1) What is the argument for systemic thinking?. Meanwhile, the aim is to find out the concepts and propositions of systemic thinking.

## **FINDINGS AND DISCUSSION**

### **The Basics of Systems Thinking**

### Concept

Concepts are symbols used to interpret phenomena (Jonhn, 2000). The activity of building a theory is similar to building a walled house. Before building a developer, of course, one must know the structure of the land, the area of land and the allocation of its use, the direction and strength of the wind, the sun's rays, the location of the main road, the area is prone to earthquakes or landslides and so on. On the basis of this understanding, parameters are set as benchmarks in building walled houses. Brick by brick glued to one another to form walls and rooms. In the end, after being given a roof and equipped with doors and windows, it becomes a walled house that is ready for habitation.

If the main element to build a walled house is brick, then the concept is a "scientific brick" to build a theory.

News of the "corona" virus that has attacked China lately has always been reported in various media, it could be a punishment for their atrocities against Muslims. This news is described as a phenomenon, a major event as well as tense in various parts of the world. What symbols can be used to capture the phenomenon or event, some may use the "doom" symbol.

Furthermore, to explore this phenomenon through symbols, namely punishment, the sentence of punishment is a sentence that is in accordance with their behavior in treating Muslims. There are two types of symbols used in every language, both natural and artificial languages. The two types of symbols are a). Primitive symbol, b). Child symbol

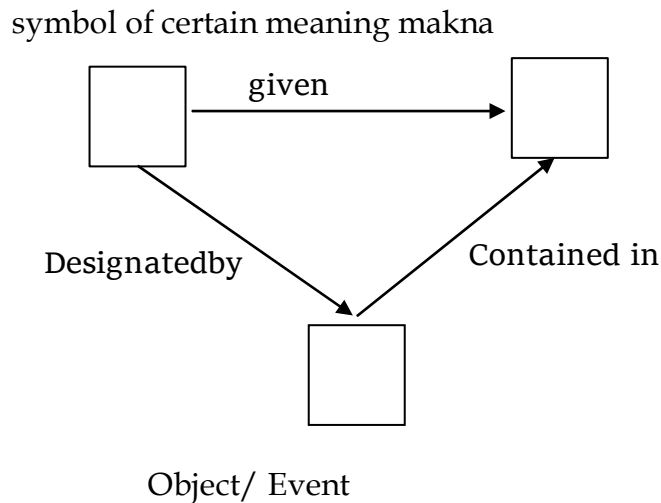
- (1) Primitive symbols can be agreed in meaning without being explained by using other symbols. The meaning is conveyed or obtained only by referring to the example or object for the symbol in question or pointing to examples or objects that are not intended by that particular symbol. Primitive symbols can be agreed upon without meaning can be explained by using other symbols. The meaning is conveyed or obtained only by referring to examples or objects for the symbol in question or pointing to examples or objects that are not intended by that particular symbol (Reynolds, 1971). For example, the elephant is a primitive symbol because the elephant cannot be described using other symbols in the form of words, the meaning of the

elephant symbol can only be understood by pointing at the animal in question.

- (2) Derived or nominal symbols can be explained with other derived symbols whose meanings have been understood beforehand. Example: Current Activa (derivative symbol) can only be understood if it first understands cash (derivative symbol), receivables (derived symbol) and inventory (derived symbol).

### Forming a Concept

A concept arises because it is formed. To form a concept, three elements are needed, namely: symbols, meanings and events. (*A concept arises because it was formed. To form a concept three elements are needed, namely: symbols, meanings and events.*) (Zetterberg, 1966). These three elements, namely: symbols, meanings and events, are elements that can form a concept.



### Proof

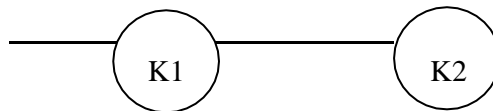
#### Definition proof

A postulate is a statement about the nature of the phenomenon. (The proposition is a statement about the nature of the phenomenon) (Zetterberg, 1966). A statement about an existing phenomenon is a proposition in systemic thinking. If the statement of the corona virus phenomenon is a punishment from Allah swt because of their behavior towards Muslims and they are also atheists, then "turning off" the nature



another. One wall is connected to another wall following a certain shape, then a room is formed. If bricks are a concept, walls are a proposition then the house is a theory. Theory in building by arranging the postulates into an integrated series. The key word is an integrated set of propositions or a system of propositions.

Chart explanation



The postulates (a) and (b) do not form a theory because they cannot be combined; what happens is only the set of arguments, namely the arguments a and b only

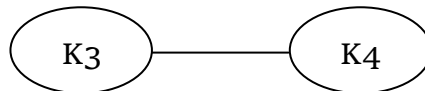
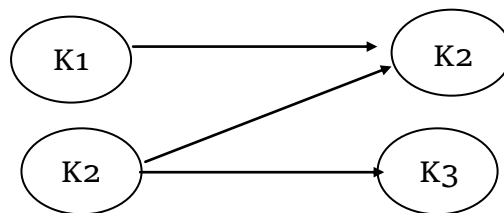
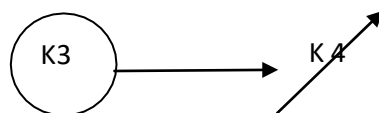


Chart: set of propositions a



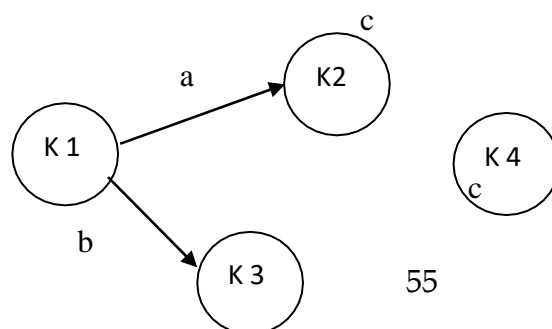
K1K2 Explanation of the chart:

Arguments(a),(b)and(c)could K2K3 integrated into a system. Bybecause it formed a theoryi



Theory formed as a system of postulates

Chart: theory as a system of propositions







**Model**

Definition of Model

Model is assembling a set of propositions or forming a system of

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composes or forms a system of propositions it is a model.

In various conversations theory and model are often used interchangeably. Judging from the process of formation there is no difference between the two. The basic elements are the same, namely the concept. However, the model differs from the theory when viewed from the informative value it contains. The model is formed by a series of low informative values, while the theory is formed by propositions with a higher informative value.

Model Building

The alternative form of the model arrangement can be seen through the following description:

- a. A set of independent variables (x) with one dependent variable (y)

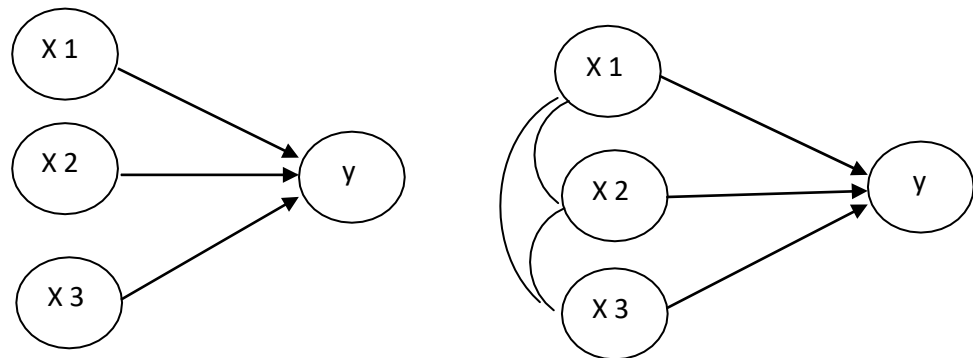
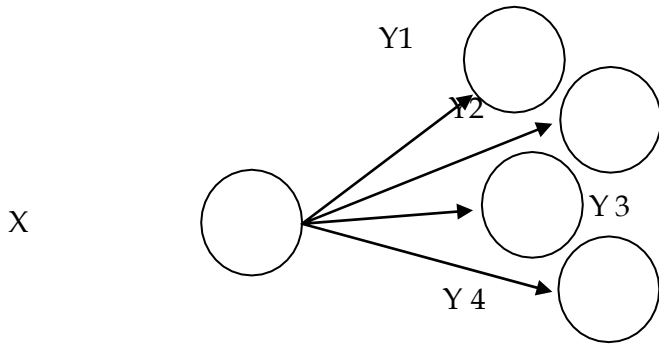


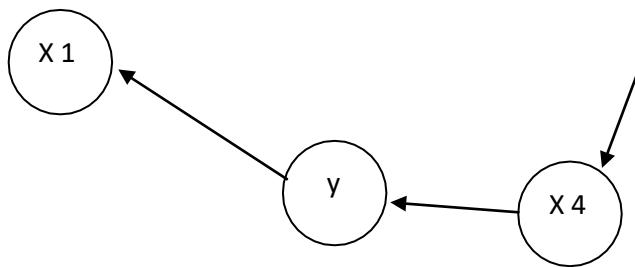
Chart explanation

The variables x1, x2 and x3 are combined into one, look at the possibility of intercorrelation between them.

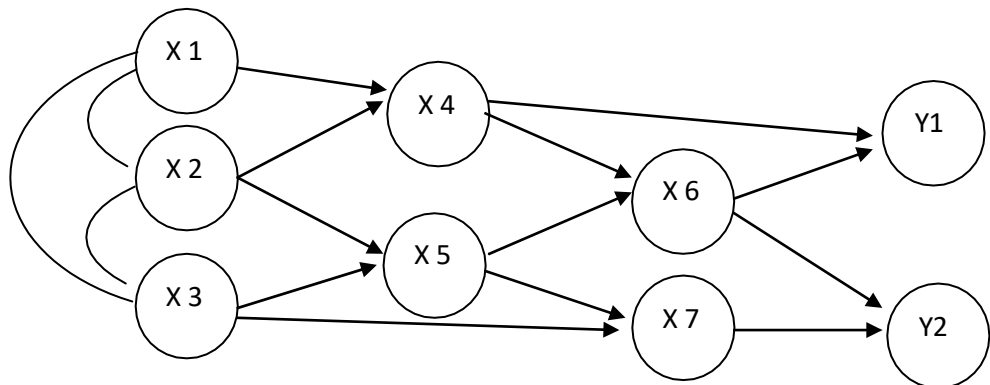
One variable (X) with a set of dependent variables (Y)



Chain pattern



Complex setup



**Paradigm**

Paradigm is a set of assumptions, both expressed and implied, that forms the basis for scientific ideas. (A paradigm is a set of assumptions, both explicit and implied that are the basis for scientific ideas) Philips, 1971).

Behind every scientific idea is a paradigm that is often unspoken. This paradigm gives direction from meaning to these ideas. Scientific ideas obtained based on the paradigm that the earth is round will be different from the paradigm that the earth is flat.

Likewise, the paradigm which states that humans are basically lazy to work will produce different scientific ideas than the paradigm

that humans are active with high initiatives.

#### **Building a Paradigm**

To make assumptions, it is necessary to observe the following three conditions:

- (1) Assumptions must be relevant (relevant) to the problems and issues being studied.
- (2) The assumption must be inferred from the situation as it is, not the state that should exist.
- (3) That assumption must be stated explicitly, not allowed to be implied.

The three conditions above are ways that can be taken by people who want to make the paradigm the basis for systemic thinking to make correct assumptions. The assumption is certainly not just artificial, but the assumption is explained in the form of a statement accompanied by logical logic. The assumptions used are presented in the form of

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#### **CONCLUSION**

Systemic thinking is a strategy in order to understand complex systems by analyzing the parts of the system to then find out the pattern of relationships contained in each element or elements that make up the system. To realize various scientific activities, scientific language is needed with its main elements, namely: concepts/concepts (symbols used to interpret phenomena), propositions (a statement (statement) about the nature of phenomena), theories/theories (a system of postulates or an integrated set of propositions), models (assembling a set of postulates or forming a system of postulates) and paradigms (sets of assumptions, both expressed and implied, that form the basis for scientific ideas)

Each of these basic foundations of systemic thinking in order to really function optimally as the basis for systemic thinking needs to be conceptualized, built on the arguments and theories, and made assumptions. The means of scientific thinking are used as a tool for branches of knowledge to develop their knowledge material based on scientific methods. While the function of the means of scientific thinking is to assist the process of the scientific method, both deductively and

inductively.

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