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EXPLORATION OF SYSTEMS THINKING IN DECISION MAKING OF THE PRINCIPAL OF UPT SMP NEGERI 18 MEDAN

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ABSTRACT

The principal's decisions are made within a complex organization called a school. This study explores how systems thinking is reflected in principals' perceptions of their decision-making processes. Based on qualitative analysis of interviews and focus groups, principals' descriptions of their effective decision making reflect systems thinking in the following three areas: (1) expanding the number of choices; (2) identify possible consequences of various alternatives; and (3) search for and analyze relevant information. Because schools are inherently complex organizations, the findings of this study highlight the relationship between the complex nature of principals' decision making and systems thinking. Based on the findings of this study, systems thinking can serve as a framework for analyzing principal decision making. Therefore, systems thinking can be used to facilitate the selection of new principals. Of course, selecting the most capable candidates for school leadership positions has a significant impact on the performance of SMP Negeri 18 Medan.

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1. INTRODUCTION

One of the most important contributions to school leadership is decision making. This can be said to be the most difficult job and also has risks because if the decision taken has the potential to be worse it will disrupt performance as well as career development patterns and even be difficult to improvise. Many opinions from experts state that bad decisions do not necessarily reflect bad intentions. But in some cases, bad decisions can be traced to how decisions are made, whether alternative decisions that are unknown or not understood, as well as various consequences that are not carefully considered, coupled with less credible information. The principal determines the decisions made for the complex institution known as the school. Life at school includes many events, human resources and processes. Under certain conditions, there will be a comprehensive variety of events that become school routines. Due to the existence of relationships within the school, of course each division of an activity will influence each other, both in good and bad conditions. Besides that, a number of certain stakeholders have mutual needs and desires which sometimes also contradict each other. In these complex conditions, systems thinkers are able to facilitate the effectiveness of school principal decision making as a means of achieving the results expected by the school. (Renaldo, et al 2022)

As a form of approach that recommends various considerations for specific problems in an overall way, systems thinking focuses on the relationships between system components rather than the components themselves. This approach does not attempt to divide various systems into several parts but focuses specifically on the dynamics between parts that take place between interaction networks. So, systems thinking has two main meanings that complement each other, including dealing with separate components to observe the whole system and thinking about each component as part of the whole system. Systems thinking is used as an effective effort to survive in real life situations (Faizah, 2020). Therefore, this has been recommended as an effort to support managers to effectively deal with various contemporary challenges that always arise on related issues. Then in particular there is some research that recommends systems thinking as a framework for decision making. School principals as leaders are certainly given demands in making decisions from simple to complex problems so that they gain the benefits of systems thinking. The purpose of this research is to explore answers related to the problem formulation regarding how systems thinking affects school principals' perceptions of the decision-making process. It is hoped that the results of the exploration can contribute to knowledge related to the application of systems thinking in school principal leadership.

2. METHODS

This research is qualitative in nature so it can provide rich textual descriptions of the complex ways that people experience a particular problem or situation. (Sulistiyo, 2023) Thus, the author explores the meaning that school principals give to issues and situations that involve the use of systems thinking in the decision-making process. Data was collected through interviews and focus groups with informants. The informants for this research were four assistant principals, including Pirhot Hutagalung, S.Pd. as representative for curriculum, Tomson Hutasoit, S.Pd. representative for student affairs, Lies Hanurani Sibuea, S.Pd. deputy for facilities and infrastructure and Jon Piter Silalahi, S.Pd. representative for public relations. And the object of the research study is the form of decision making of the head of UPT SMP Negeri 18 Medan, namely Dewi Sri Indriati Kusuma, S.Pd., M.Si.

The semi-structured method was found to be most appropriate for the purpose of this study. Both interviews and focus groups are semi-structured, which 'allows researchers to respond to existing situations, respondents' emerging worldviews, and new ideas on the topic. Key questions are planned in advance, although interviews and focus groups are also conversational, with questions flowing from previous responses where possible.

Data analysis is a three-stage process, namely condensation, coding, and categorization. After the data was collected, the author found that not all of it could meet the research objectives, so it required a separation process. So, during the first stage of analysis (condensation) we looked for data excerpts related to systems thinking in decision making, which is the topic of the research. During the second stage (coding), each relevant data segment (speech) is coded according to the aspect of systems thinking it represents. This stage, different from the previous stage, is data-based and not theory-based because we do not use a priori codes but rather inductive codes, which are developed through direct examination of the perspectives articulated by the principal.

3. RESULTS AND DISCUSSION

3.1. Concept of Decision Making and System Thinking

A. Decision Making

Decision making is a conscious process of generating several alternative possibilities that are selected to achieve the desired conditions in a specific environment (Muktamar, et al. 2024). Each stage of decision making will certainly result in finalization which is likely to motivate action. The decisions taken are of course based on preference values and explicit knowledge of the party making the decision (Jamal, 2022). Specifically, the decision-making process involves five steps: (1) defining the problem; (2) identifying alternatives; (3) determine criteria; (4) evaluate alternatives; (5) choose an alternative. This process can be seen as consisting of two parts: the first three steps are about structuring the problem, and the last two steps are about analyzing the problem.

Decision making among school principals is illustrated as the "sine qua non" of educational leadership Rulitawati et al 2020. School principals make decisions not merely to implement mechanical regulations but are related to the complexity of the institutional context so wisdom is needed in decision making because this is related to implementation of external and internal policies. School principals always create local policies that align with government guidelines so that they are in line with the school's specific situation. Apart from that, school principals also make many decisions without being able to pay full attention to a variety of relevant information to obtain optimal results. The principal has decisions made in the domain when my house's internal and external interests have different or even incompatible goals and views. In this context, a school principal will certainly be seen standing in front of the school door between the intra- and extra-school environments. The extra-school world includes the school board as the formal authority as well as those who provide work to staff individually or in the form of organized committees. Meanwhile, from the intra-school world, including school staff and students, of course there are many conflicts over the loyalty of school principals in making decisions. Principal decision making is certainly quite complex in the area of contemporary accountability that includes maximum levels of student achievement in a dynamic education system. In this environment, school staff are certainly empowered to maximize student academic progress and outcomes.

B. System Thinking

Cabrera, et al (2023) define systems thinking as a scientific discipline that observes a comprehensive framework that has relationships without looking at a static pattern of change. This is of course a series of general principles as well as techniques in thinking. Harahap (2022) also defines systems thinking as the art or science of concluding something so that it can be relied upon in relation to attitudes in developing understanding so that it becomes deeper and underlies a structure. Besides that, systems thinking is also the ability to observe the world as a complex system and understand that we not only do something but also have to think about it first. Systems thinking is also a series of abilities in synergistic analysis that are used to maximize the ability to identify and master systems as well as predict attitudes and design improvisations to produce something desired. This skill is also a form of system cooperation. Ultimately, the general definition of systems thinking is to produce two main opinions that complement each other to address separate components to observe the entire system and its separate components.

From the perspective of systems thinking, many variables in the system can be observed as causal correlations to feedback which includes system output as input and part of the causal mechanism. This feedback will later be connected and this relationship will create a mechanism that determines behavior. This feedback will later reject contradictory relationships between cause and effect in an event.

C. Characteristics of System Thinking

1. Think comprehensively between segments
2. Observe something in the larger illustration
3. Explore the impact of an action
4. Identify how a correlation can affect the system
5. Understand the concept of dynamic behavior
6. Understand how system structure shapes system behavior
7. See things from a different perspective

D. Steps of System Thinking

According to Maulana (2023), Systems thinkers see a problem at at least three levels: event, behavior (system behavior), and structure (underlying structure). The deeper you go, the more difficult the analysis becomes because the concepts used become more abstract. But usually, if done well, the available solutions will be better as described below.

1. Event – reactive approach
The highest level is the incident or 'event' level. This level is the most visible, usually able to be captured by the five senses.
2. System behavior – anticipatory approach
A deeper level that can be done is to observe system behavior. One important factor to pay attention to at this level is time. In other words, we will try to see the dynamics of the system from one time to another.
3. System structure – generative approach
This approach is the most difficult approach because the party who sets the policy must be able to think analytically regarding something that is abstract in nature. In order to be able to analyze at this stage in making a policy, they must try to find out the relationship between one factor and another. These interrelated factors are what will give rise to patterns/tendencies that level (2) analysts usually capture. Systems thinkers usually work at this level (3). Seeing the structure of a system is not easy.

Sometimes the relationships between factors are separated by location and time. The system also changes all the time, boundaries are unclear, etc. If analysts can use this approach (3), it is hoped that a solution will be generated

E. Systems Thinking in School Leadership

Acton (2021) states that leaders in the field of education have the freedom to use data on a large scale but do not have the ability to maximize the effectiveness of that data as an instrument for creating sustainable change, so systems thinking is needed here for facilitators of the practices to be developed which are of course standardized by authentic data. Then, learning is also a transformation of behavior caused by training and experience (Simanjuntak, et al. 2022). Systems thinking is also able to establish work rubrics to represent many dimensions in a complex curricular program so that it can be used as a technique and is explicit in translating and evaluating programs against existing methods (Suwarno, 2021). Systems thinking is considered capable of helping leaders, especially in the field of education, to observe community relations towards a sustainable mechanism and involve community support in schools to optimize teaching and learning activities.

3.2 Result and Discussion

According to qualitative analysis of data obtained from research informants, the discussion was divided into three indicators related to effective decision making by school principals, namely based on the first indicator: (1) expanding the number of choices (2) identifying possible consequences of various alternatives, and (3) search for and analyze relevant information. The first two indicators can be seen as steps in the decision-making process, the third indicator can be considered as a process support activity and not part of the process itself, but these indicators are closely related to each other in the decision-making process of the head of UPT SMP Negeri 18 Medan.

A. Expanding the Number of Choices

The first stage in decision making, which is often done unconsciously, is to expand the feasible options. The findings of this indicator show that the system thinking of a school principal will produce several feasible decision options. From the perspective of systems thinking, each dimension of school certainly has a scope that can influence it so that there must be more than one reason or implication related to the answer to a choice that is considered feasible. Based on this assumption, the school principal is system-oriented towards considering an action. Consider the various possibilities that occur as a result of the resulting system thinking and observe the various possibilities that will occur beyond the assumptions. In particular, this thinking produces a multidimensional view which will later describe the way the principal leads the school by applying the results of his thinking in his work.

Based on the results of an interview with one of the informants, namely Pirhot Hutagalung, S.Pd. as the representative of the curriculum sector, gave his perception of the multidimensional view of the head of UPT SMP Negeri 18 Medan

"I believe that one of the important roles of the principal is to demonstrate additional options. We all know that decision making must be structured, weighing the pros and cons of various options. But often people at school don't even understand that we have to make decisions, because they mistakenly think that there is only one option. And that's the principal's job, to identify additional options, to show that a decision needs to be made."

Decision making is a thinking process that consists of selecting logical options from the available options. Pirhot Hutagalung, S.Pd. as the representative of the curriculum sector, stated that in order for decision making to be carried out, human resources in schools must understand that school principals certainly have a variety of options that must be evaluated. Then, according to the informant, the important role of the school principal here is as the party who determines how an action will take place whether it is in accordance with expectations or not.

Then, the next interview was with an informant named Tomson Hutasoit, S.Pd. The representative for student affairs, as the person who most frequently interacts with students, emphasized that in a particular situation, there is a phase where the principal makes a decision that reflects a multidimensional point of view regarding choices regarding responding to problematic students. System thinking here will of course produce a policy which is expected to be able to create changes for students and also the image of the school

"There was a situation when I saw the way the principal took part in handling a case related to serial cellphone theft at SMP Negeri 18 Medan. When the counseling guidance teacher and related teachers had tried to resolve and find a way out, in the end the principal gave two options where the first option had failed to be implemented, namely to keep students from being expelled from school. But in this condition the principal takes the decision to expel the student from school. "This is also a form of several possible ways to deal with students in order to provide space for school principals to also establish several policies that are multidimensional in nature, where the first dimension is preventive and the second is repressive."

According to Tomson Hutasoit, S.Pd. The representative for student affairs stated that when facing students who are resistant or who have crossed the line, the principal is certainly aware that there is more than one possibility to consider such conditions. There is a possibility that if the principal acts in a certain way he will be trapped in his own policy because the policy has not actually produced results so further consideration is needed to create a new possibility which will later produce something that is expected. This will certainly illustrate the leadership of the principal of SMP Negeri 18 Medan in creating a multidimensional view of dealing with problems at school.

Then, the third informant, Lies Hanurani Sibuea, S.Pd. the representative for facilities and infrastructure provided a perception of the multidimensional thinking by the Principal when the informant provided recommendations for a particular condition. According to him, to produce a solution that can be prioritized the key is brainstorming. According to Lies, teachers are not always able to identify more than two opposing decisions in the same condition. So far, informants admitted that the head of UPT SMP Negeri 18 Medan helped them identify a series of available actions.

"When I am discussing a decision with the principal, sometimes at first there are two opposing options. Usually in the form of support or challenge. But I am sure that of these two choices there is a choice that is actually not desired but must be done. And I once asked why this option was still chosen. "The principal's only answer is that it is not always good in our opinion, but it is good for the existing situation, so the decisions taken must adapt to the situation."

In short, systems thinking is reflected in school leaders' descriptions of their ability to view multiple aspects of a problem simultaneously, thereby expanding the number of options available regarding the decisions they must make. Selecting from a variety of

options, which is one of the characteristics of systems thinking in school leadership, is likely to increase the effectiveness of the decision-making process and its outcomes.

B. Identifying the Possible Consequences of Various Alternatives

After identifying several decision options, when making a decision, the principal includes several comparisons as benchmarks in determining choices and predicting the results and effects of the decision. Systems thinking is certainly reflected in every word the research subject says about how he identifies the effects of the actions he takes. Knowledge related to separate school components and subsistence is a whole system that can change each other and influence each other both directly and indirectly as a result of feedback which will later become a form of the principal's point of view as a representation of the overall context.

Based on the results of an interview with one of the informants, namely Jon Piter Silalahi, S.Pd. the representative for public relations gave the perception that the head of UPT SMP Negeri 18 Medan was able to imagine the indirect connection between schools and considered it very important. He likened this to a chain, where each link is connected to another

“For example, when I make a decision regarding a particular teacher's request for a change to his or her class or schedule, I think about a chain of reactions where one reaction causes additional reactions to occur. It is not easy to predict this entire chain, which sometimes reaches unexpected places. However, I have to take into account the chain reaction, which is not always negative.”

Then, the next interview was with an informant named Pirhot Hutagalung, S.Pd. as the representative for curriculum stated that when the head of UPT SMP Negeri 18 Medan made a decision, there were times when he postponed it because he took broad considerations into consideration.

“I believe that the decisions he makes have an impact beyond what is first seen. The consequences may be in areas that I don't immediately think about, but that have an indirect relationship to my decision. Therefore, I always choose to just support him, to think about all the possible impacts of his decision.”

By reflecting on the indirect influences of his decisions, the informant understands that the school is a complex system where each part is connected to other parts, so that the consequences of an action in one domain of the system can be felt in other domains that are unclear and unclear. clear. known beforehand. To successfully navigate the complexities of school, Justin delays his decisions so he can better predict the outcome. In summary, the principals' descriptions of identifying the various influences of their choices are a reflection of systems thinking. By considering separate school elements as parts of a whole system, where changes in one or more parts can affect other parts indirectly, the principal can see the parts of the system in the context of the whole.

C. Search and Analyze Relevant Information

The process of making public policy is a complex process because it involves many processes and variables that must be studied (Lubis, et al. 2022). To obtain effective decision results, school principals are required to search for information that is in line with their decisions. In addition, they are required to analyze the efficiency of this information. This is because every statement from the school principal will certainly describe how the system thinks from the information he has explored. For example, system thinking is dominant in their will over other people's opinions. Because a school principal must understand every

condition of a complex system as well as several possible dimensions and implications that will describe all the problem points. There are important components of a multidimensional and holistic leadership ability, including the limitations of one's abilities so that the principal should not think that he knows all about someone's job description. On the contrary, they are obliged to learn from the people around them, especially those who contribute opinions, so as to produce new points of view for them.

Based on the results of an interview with one of the informants, namely Tomson Hutasoit, S.Pd. The representative for student affairs gave the perception that the head of UPT SMP Negeri 18 Medan described his willingness to learn from others, not only from his school management team but also from his school staff.

"I often consult with people around me through formal and informal discussions. Those who consult with me may include members of my management team, teachers, colleagues, administrative personnel, or even my family. I believe that a principal who is open to learning from everyone will be an example for his teachers to follow, who in turn will also be open to new suggestions and improvements. In this way, we can embrace different and sometimes even conflicting perspectives on school events. Our wise men have said: 'Who is wise? He is the one who learns from everyone'".

Systems thinking is also reflected in school leaders' descriptions of tolerance for ambiguity, where they make decisions under conditions of uncertainty. In relation to the day-to-day amorphous problems that occur in schools, a principal who is holistically oriented and accustomed to leading the whole can understand that the seemingly separate details of a particular situation are actually part of one big picture. Thus, a principal's lack of knowledge of all the details of a particular situation will not hinder his or her ability to make decisions based on only a portion of the information currently available.

D. Discussion

Qualitative analysis of participant interviews revealed that systems thinking was reflected in the principals' descriptions of three areas of decision making. First, it is reflected in the expansion of the number of choices. Because decision making is considered a selection among several existing alternatives (Muktamar, 2024), this stage is sometimes skipped. Through a systems thinking perspective, before determining decision alternatives, additional alternatives must be explored and considered. There is more than one choice and even several conflicting considerations in a condition. Both systems thinking is reflected in the expansion of one's point of view which will likely have its own consequences. This approach certainly focuses on the indirect implications of each choice, both long-term and short-term consequences. System thinking from the school principal can help the principal to estimate the consequences of the decisions he takes on the future in stages. And the third, namely systems thinking, is a reflection of a person's increasing motivation to learn from other people and facilitate themselves from various sources of information.

The findings of this study highlight the relationship between the complex nature of principal decision making and systems thinking. Schools are inherently complex organizations, involving a variety of interacting people, activities and goals. Therefore, these organizations often face fundamental conflicts: their operations may result in a variety of actions, each of which has its own strengths and weaknesses, and different stakeholders may have varying desires, views, expectations and demands. or even inconsistent. In this

context, the principal's decision-making process is complex, involving many criteria, various alternatives, various consequences, loyalty and conflict.

4. CONCLUSION

An exploration of systemic decision making in relation to other leadership characteristics and abilities, such as principals' sense of self-efficacy, is worth investigating. Further research could also examine the correlation between systems thinking in decision making and leadership effectiveness, thereby developing a more complete interpretation of the impact of school leaders working at the systems level. Ultimately, it would also be beneficial to conduct longitudinal studies, including repeated data collection among the same principals to explore the development of their decision-making processes within a systems thinking framework. This will allow for evaluation of decision making over time, and more importantly, will help identify ways to support, improve, and accelerate systemic decision making among aspiring, novice, and even veteran principals.

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6. AUTHORS' NOTE

This article explains how systems thinking can influence a school principal's decision making. The author hopes that this article can be a reference for readers, especially in the field of education.

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