

# Cross-Sectoral Collaborative Governance in School Health Services: A Multi-Case Study at Junior High Schools in North Minahasa Regency

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## ABSTRACT

This research aims to analyze the cross-sectoral collaboration patterns between the education and health sectors in managing School Health Services (UKS) and to develop a governance model adaptive to regional characteristics. The central problem is the phenomenon of Silo Mentality (sectoral ego) and the Health Coverage Gap, which hinders the effectiveness of school health services despite the region's Universal Health Coverage (UHC) status. Employing a qualitative multi-case study approach, this research was conducted at three types of junior high schools in North Minahasa Regency: Urban (SMPN 1 Airmadidi), Rural (SMPN 1 Dimembe), and Private (Manado Independent School). Data were collected through in-depth interviews, observations, and documentation, followed by cross-case analysis. The findings reveal that: (1) Collaboration patterns remain trapped in administrative formalities and are passive-reactive; (2) Bureaucratic barriers and the absence of resource pooling trigger systemic budgetary gaps in public schools; (3) This study successfully constructed an original model: The Mapalus Spiral Integrative-Adaptive (MSIA). The MSIA model transforms the local wisdom of Mapalus into a social technology that integrates digital presence and context-specific adaptive management. The implications of the study emphasize that effective UKS governance requires a shift from administrative leadership to adaptive leadership rooted in local collectivity and digital innovation.

**Keywords:** Collaborative Governance, Educational Management, Mapalus, MSIA Model, UKS.

## INTRODUCTION

Education and health, delivered at the Junior High School (SMP) level, are two key pillars of human development that interact symbiotically. SMP is not just a place for transferring knowledge,

but a vital ecosystem for students' holistic growth. Students spend a significant portion of their lives at school, making it a crucial environment for fostering their academic achievement, physical health, mental well-being, and social growth (EuroHealthNet, 2026).

Investing in a Health Promoting School (HPS) approach will strengthen the role of schools as critical spaces, fostering supportive environments that lay the foundation for lifelong health and equity. A Health Promoting School (SPK) is a school that continuously strengthens its capacity as a healthy environment for living, learning, and working, going beyond health education to embed well-being into school policies, practices, and culture (WHO, 2025).

Regulatory, the governance of cross-sectoral collaboration in the implementation of the UKS is multidimensional, involving various ministries through the Joint Regulation of the Four Ministers (2014). However, in implementation, this synergy often encounters bureaucratic hurdles. Without sound inter-agency orchestration, school health programs tend to be largely ceremonial and fail to address the core preventive and promotive aspects. This is exacerbated by collaboration patterns that remain mired in formalities, and regional health policies without strong collaborative governance and cross-sectoral programs are prone to overlapping authority.

In 2022, the central government, through the Ministry of Education, Culture, Research, and Technology, launched the School Health Effort Revitalization (UKS) program through Healthy Schools (Sekolah Sehat) to create healthy, strong, and intelligent Indonesian children with character. The launch invited all stakeholders to work together to revitalize the UKS as an effort to promote the health of the school community. This situation demands a reconstruction of the UKS governance model, which is more adaptive, as proposed through the Integrative-Adaptive Spiral (SIA) perspective (Lengkong, 2026), which synergizes modern management with the local collectivity values of Mapalus (Rumbay et al., 2022) as the driving force of the organization, including junior high schools (SMPs) as formal educational institutions in implementing UKS.

A significant irony emerged in North Minahasa Regency, which recently received the Universal Health Coverage (UHC) Award in 2026. On the one hand, this award reflects the success of inclusive healthcare access for residents. However, on the other hand, the UKS ecosystem at the junior high school level actually demonstrates a Health Coverage Gap. Preliminary research at SMP Negeri 1 Airmadidi, SMP Negeri 1 Dimembe, and SMP Manado Independen School (MIS) showed that the UKS room often serves as a "monument to formality" or simply a first aid room without adequate medical personnel. This situation emphasizes that universal health coverage at the macro level does not correlate linearly with the quality of health services within schools.

Furthermore, the preliminary research indicating the importance of this study can be understood through several aspects synthesized by the researchers. First, the paradox of UHC achievement versus UKS reality, namely macro data showing that North Minahasa has very high JKN (National Health Insurance) coverage (above 95%), which resulted in the Universal Health Coverage (UHC) award. Micro-level facts about the School Health Unit (UKS) show that, based on regional performance reports, the health budget is largely allocated to curative services at community health centers (Puskesmas) and regional hospitals (RSUD). Conversely, the specific allocation for "School Health Efforts" in the Budget Implementation Document (DPA) is often merely a formality within health promotion sub-activities, resulting in incidental interventions in junior high schools (e.g., providing iron tablets for adolescent girls or annual dental check-ups).

Second, spatial variability (urban vs. rural) is evident. In urban areas (Airmadidi), communication between schools and the Education/Health Office is very rapid. However, overcapacity is a challenge. Community health centers in the city center serve many schools simultaneously, so monitoring the School Health Unit is often merely an administrative formality (simply signing the monitoring book). In rural areas (Dimembe), the main challenge is also

overcapacity. Here, the School Health Unit is often simply an empty, locked room, awaiting irregular visits. Thus, the determination of junior high school education units in this study is based on considerations of spatial variability and institutional status differentiation to obtain a comprehensive picture of collaboration. The previous use of the categories 'Urban, Rural, and Private' needs to be re-positioned within a more systematic framework, namely regional variability (Urban-Rural) to capture geographic constraints and bureaucratic access as well as the status differentiation of junior high school education units (Public-Private) to dissect differences in internal governance and the reach of district government policies.

Third, there is a managerial gap in Private Schools (MIS), where field data shows that schools like Manado Independent School (MIS) have superior independent infrastructure (school clinics, standby nurses). Collaboration issues arise from decoupling, or a systemic disconnect. Elite private schools often feel they don't need the support of the Community Health Center (Puskesmas), and conversely, the Puskesmas feel no need to intervene in private schools. As a result, student health data in private schools is not integrated into the regional health records system (data silos).

Fourth, there is a weakness in the information system (digital presence), where there is no single application (Dashboard) that unifies Trias UKS data between the Education Office and the Health Office in North Minahasa. Reporting is still manual/hierarchical via WhatsApp or paper forms, which causes a "data delay" in strategic decision-making by the Regent or stakeholders.

The root of this paradox lies in the strong silo mentality (sectoral ego) that is entrenched in the regional bureaucracy. A siloed mindset hinders the flow of information between units, creating a divide that causes the Education Office to view UKS as an additional administrative burden, while the Health Office positions it as an internal school matter. This disconnection leads to a responsibility gap and the failure of resource pooling mechanisms (Ansell & Gash, 2008). Yet, socioculturally, the people of North Minahasa are rooted in the Mapalus philosophy, an original social technology (Lengkong, 2026) for collective cooperation. The resulting collaboration crisis demonstrates a failure to transform local Mapalus values into modern bureaucratic management practices. Research on collaborative governance in the implementation of the UKS (School Health Unit) has been conducted and is a key factor in the success of the UKS. However, the majority remains trapped in a sectoral dichotomy, often facing operational or implementation challenges in schools, only addressing macro-administrative aspects without examining spatial variability at the micro-school level. There is a lack of literature that dialogues collaborative governance theory with the dynamics of local wisdom in the context of school health. Collaboration is linear and static, thus failing to address the differing geographic and bureaucratic challenges in urban and rural areas. In-depth analysis of how policy synergy between two major agencies, the Education Office and the Health Office at the district level, in managing the UKS remains very limited (Rohani & Nurjanah, 2024; Goi et al., 2024; and Umiyati, Flora & Zulkarnain, 2026). This is where the research gap underpins the urgency of this study.

Based on the analysis of these research and theoretical gaps, the novelty of this study appears to lie in three main aspects. First, a contrasting multi-case study approach examines collaborative governance across three spatially and status-different school typologies (Urban, Rural, and Private), to generate a sharp cross-case analysis of bureaucratic barriers and geographic access (Yin, 2018). This is important because the coordination pattern between the Community Health Center (Puskesmas) and Public Junior High Schools (SMP) in the city center (Urban) certainly has different dynamics than Public Junior High Schools in rural areas (Rural) which are constrained by distance. On the other hand, the involvement of private schools such as MIS is unique in testing the extent to which cross-sectoral policy synergy can be integrated with a self-management system under the auspices of the foundation. With this sharpening of the typology, the cross-case analysis becomes

sharper in identifying the most adaptive collaborative governance model for each school characteristic in North Minahasa. Second, the integration of the Integrative-Adaptive Spiral (SIA) model, using the SIA perspective (Lengkong, 2026) as an analytical tool to transform a linear strategic plan into a pulsating and adaptive management ecosystem to the disruptions of the times. Third, the reconstruction of Mapalus as a social technology, namely this research not only captures technocratic collaboration, but also explores how Mapalus can be constructed into a "social algorithm" to break down sectoral silos in regional public services.

Based on the novelty analysis, this research is urgently needed to produce recommendations for an original, adaptive, and sustainable UKS governance model for the North Minahasa Regency Government, while also providing new theoretical contributions to local wisdom-based educational management. Therefore, this study aims to in-depth analyze "Cross-Sectoral Collaborative Governance in UKS Implementation" at the junior high school level, thereby generating recommendations for an adaptive governance model for the North Minahasa Regency Government.

Research on the implementation of School Health Programs (UKS) is complex, dynamic, and encompasses many interrelated factors. Therefore, this study focuses on an in-depth analysis of cross-sectoral collaborative governance in the implementation of School Health Programs (UKS) at the junior high school level in North Minahasa Regency. In line with this research problem formulation, the objectives of this study are as follows: 1) To analyze the pattern of cross-sectoral collaboration between the Education Office and the Health Office in UKS governance in junior high schools with different regional typologies (Urban, Rural, and Private) in North Minahasa Regency. 2). Analyze the dynamics of power relations, bureaucratic obstacles, and the effectiveness of resource pooling amidst the challenges of sectoral egos in UKS governance in North Minahasa. 3). Find the development of a UKS governance model based on local collectivity values (Mapalus) and integrative-adaptive in nature to ensure the sustainability of policy synergy in North Minahasa.

## METHOD

### Research Type

The research method used is a case study with a multi-case study design (Creswell & Poth, 2018). The cases in this study are SMP Negeri 1 Airmadidi, SMP Negeri 1 Dimembe, and SMP di Manado Independen School (MIS), each of which is an educational unit or formal educational organization located in North Minahasa Regency. In qualitative multi-case studies, clarity of the unit of analysis is crucial for the validity of the findings. By distinguishing between the regional dimension (geographical location) and the institutional dimension (school status), overlapping groupings are avoided.

The determination of SMP educational units in this study is based on considerations of spatial variability and differentiation of institutional status to obtain a comprehensive picture of collaboration. The use of the categories 'Urban, Rural, and Private' needs to be positioned within a more systematic framework, namely regional variability (Urban-Rural) to capture geographic constraints and bureaucratic access, and differentiation of educational unit status (Public-Private) to examine differences in internal governance and the reach of district government policies. This is important because the coordination pattern between the Community Health Center (Puskesmas) and public junior high schools in urban centers certainly has different dynamics than public junior high schools in rural areas, which are constrained by distance. Furthermore, the involvement of private schools like MIS provides a unique opportunity to test the extent to which cross-sectoral policy synergy can be integrated with a self-management system under the auspices of a foundation.

By sharpening this typology, the cross-case analysis becomes more precise in identifying the most adaptive collaboration model for each school's characteristics in North Minahasa.

A multiple-case study design was used because the three junior high schools have contrasting typological characteristics, meaning they differ. These differences are evident in SMP Negeri 1 Airmadidi, located in an urban area and the center of the Regency government; SMP Negeri 1 Dimembe, located in a rural area; and SMP Manado Independen School (MIS), which is private and under the guidance of a Foundation. Therefore, it can be argued that this research was conducted through two stages of analysis: a single-case analysis and a multiple-case analysis.

#### *1. Single-Case Analysis*

In this first stage, the researcher conducted research at each junior high school sequentially. The study began with SMP Negeri 1 Airmadidi (Case Code 1) in an urban area and the center of the Regency government, followed by SMP Negeri 1 Dimembe (Case Code 2) in a rural area, and finally, finally, to the junior high school at MIS (Case Code 3). The series of studies in this first stage served as an integral part. The single-case analysis presented includes a general description of the research location, research data, research findings, creating tables containing conceptual points, and formulating research propositions.

#### *2. Multi-Case Study Analysis*

Upon completion of the series of studies from case 1 to case 2 to case 3, the researcher proceeded to the second stage, which was a cross-site analysis or multi-case study using the Constant Comparative Method. The researcher conducted this stage, following the single-case study, continued with cross-site data analysis to obtain similar and different findings. The main activities carried out by researchers in this multi-case study include analyzing combined research data per case and constructing it into conceptually formulated research findings, creating tables for presenting research findings, and compiling research findings.

### **Research Location and Time**

The locations of this research were SMP Negeri 1 Airmadidi, SMP Negeri 1 Dimembe, and SMP MIS in North Minahasa Regency. The research period was January 2025 to April 2026.

### **Data and Data Sources**

The research data collected in this study were qualitative data in the form of words, text, and images derived from observations, interviews, and documentation studies (Creswell & Poth, 2018). Verbal data represent the social reality of the participants or informants. Their words offer detailed and concrete descriptions of the meanings ascribed to their words. For example, the informants' expressions obtained through interviews. Textual data represent the reality of the contents of printed documents in written form that convey meaning. For example, the text in a document available at school. Meanwhile, visual data essentially represent the reality of the appearance and impression contained in visual materials. For example, photos or videos of teacher activities at school.

The data sources for this research are human, namely key informants, including three junior high school principals, three teachers, two heads of education and health services, and three heads of community health centers. Furthermore, research data can also come from non-human sources, namely written documents and images in the form of photographs.

### **Data Collection Techniques**

The research will utilize data collection techniques in the form of observation, interviews, documents, and audio-visual materials. The data collection techniques used in this study are explained as follows.

### *1. Observation*

The researcher's role in the observation process is to conduct non-participatory observations (Creswell, 2014). Before conducting the observations, an interview guide and field notebook were prepared to record observations in cases 1, 2, and 3. The observation procedure followed the stages recommended by Spreadly (Sugiyono, 2007), namely: "(1) descriptive stage, (2) focused stage, and (3) selected stage." The application of these observation stages is explained in this study as follows.

In the descriptive stage, the researcher conducted a general and comprehensive exploration, describing everything seen, heard, and felt related to the main research problem during the field observations. Conducting focused observations was the second stage. In this second stage, the researcher begins to narrow or sharpen the focus on aspects of the research problem by conducting taxonomic analysis or categorization, thus obtaining a clearer picture. Finally, the selection stage. At this stage, the researcher has identified characteristics, differences, and similarities between categories and identified relationships between them. At this selection stage, the researcher has also developed a more detailed and in-depth understanding or hypothesis as research findings.

### *2. Interviews*

Before conducting the interviews, the researcher prepared interview guidelines and field notes to record the interviewees' observations. Interviews with informants were conducted face-to-face, unstructured, and used open-ended questions.

The interview procedure used followed the steps recommended by Lincoln and Guba (Sugiyono, 2007) with modifications as described below.

- a. The researcher identified the key informants to be interviewed.
- b. The researcher prepared the interview topics to be used in the interview.
- c. The researcher initiated and conducted the interviews with the informants. At the beginning of the interview, the researcher greeted the teacher and principal informants politely and in a way that was acceptable and fostered a closer relationship. The researcher maintained the good rapport that had been established with the informants throughout the interview.
- d. The researcher verified the interview results and concluded the interview with the informants. Before concluding the interview, the researcher first checked the data obtained. After confirming the data, the researcher openly stated that the interview would conclude by demonstrating the same attitude and behavior as at the beginning of the interview.
- e. The researcher recorded the interview results in field notes. The field notes were organized according to the established coding system. The data contained in the field notes was interpreted by the researcher to derive their meaning as research findings.

### *3. Documents*

In addition to using interview and observation techniques, the researcher also collected research data from documents, both public and private (Creswell, 2014). Public documents include official letters, meeting minutes, and official reports such as school programs and the principal's work program.

## **Data Analysis Techniques**

The data analysis techniques used by the researchers are adapted from the interaction model by Miles and Huberman (Sugiyono, 2014). Qualitative data analysis begins with data collection, then proceeds to data reduction and presentation. There is a mutual interaction between data reduction, data presentation, and conclusion drawing. Each conclusion and/or verification process indicates that the data collected through interviews, observations, documentation, and audio-visual materials from various data sources has reached saturation. Therefore, after drawing conclusions, the researchers return to data collection.

### *1. Data Reduction*

Data reduction in this research involves summarizing, selecting, focusing, identifying groups, and abstracting patterns from field notes obtained during data collection. The results of the data reduction are presented in the form of brief descriptions, tables, charts, relationships between categories, flowcharts, or similar. Conclusions can also be drawn directly from these data reduction results without further verification and compiled as research findings.

### *2. Data Presentation*

Data presentation (data display) in this study is carried out by compiling the information obtained from data collection or data reduction results in the form of brief descriptions, tables, charts, relationships between categories, flowcharts, or similar. The results of this data presentation can also be directly used for drawing conclusions/verification. If the data presented is unclear, it can be further reduced to ensure clarity, and then conclusions can be drawn without further verification to be compiled as research findings.

### *3. Conclusion Drawing/Verification*

Conclusion drawing/verification in this study is derived from the results of data reduction or data presentation. This conclusions/verification can be provisional or can already be formulated as research findings. If the conclusions drawn are still provisional or require verification, they need to be further reduced or presented, and conclusions can then be drawn without further verification to be compiled as research findings.

## **Data Validity Testing**

According to Sugiyono (2014:267), data validity testing in qualitative research is based on the criteria of "credibility, transferability, dependability, and confirmability." The four criteria for data validity testing can be explained as follows.

### *1. Credibility*

Data credibility testing will utilize data source triangulation and data collection technique triangulation. Data source triangulation is conducted by comparing data collected from three different data sources and ensuring that the data obtained has similarities among the three research informants. These data sources can be three identical informants, such as three teachers, or three different informants, such as a principal, a teacher, and a student. Fulfillment of these data sources is considered to meet the credibility criteria.

### *2. Transferability*

The following data validity testing criterion is transferability. The researcher's approach involves analyzing the research findings in as much detail and as accurately as possible. By analyzing this research in such detail and as carefully as possible, those who read it can better understand the research findings, which have the potential to be transferred for use in similar contexts elsewhere.

### *3. Dependability*

One of the crucial issues in qualitative research is the research process. To ensure the validity of this qualitative research process, it is necessary to apply dependability criteria to assess its quality.

Therefore, researchers conduct dependability audits through internal auditors, such as supervisors 1 and 2, and external auditors, such as examiners/assessors who are not supervisors. By conducting such audits, researchers can ensure that the research process is reliable and trustworthy.

#### *4. Confirmability*

Another important aspect of qualitative research is the quality of research results. Therefore, a new data validity testing criterion, confirmability, has been developed. This criterion is used to assess the quality of research results by recording data and information tracking and interpretation, supported by evidence from the audit trail. To this end, researchers prepare the necessary materials, such as data, data analysis results, and the research process.

## RESULTS AND DISCUSSION

### **Cross-Sectoral Collaboration Patterns in School Health Unit Implementation**

Research findings indicate a gap between administrative mandates and operational realities. Collaboration between the Education Office and the Health Office in North Minahasa is trapped in what can be described as pseudo-collaboration, where interactions occur only at a superficial level without functional integration. Circular Letter (SE) No. 800/2023 often serves as a bureaucratic artifact that fulfills formal legitimacy without addressing the substance of school-level governance. Furthermore, the absence of technical guidance for five years exacerbates the competency gap, which, according to Bryson et al. (2006), is a major obstacle to cross-sectoral partnerships because it creates an imbalance in actors' capacity to contribute meaningfully. Conversely, the flexibility of institutional autonomy in private schools (MIS) allows for more agile, solution-oriented, proactive collaboration.

These research findings confirm the Collaborative Governance theory, as advocated by leading experts, which is frequently referenced in public policy and management studies. For example, Ansell and Gash (2008), with their Collaborative Process Model, emphasize collaborative governance as a governance arrangement in which one or more public institutions directly engage non-state stakeholders in a collective, formal, consensus-oriented, and deliberative decision-making process. They emphasize institutional design and the importance of a process cycle that includes trust-building, commitment to the process, shared understanding, and the achievement of intermediate outcomes.

Emerson, Nabatchi, and Balogh (2012), with their Integrative Framework, offer a broader framework, termed the Collaborative Governance Regime (CGR). This theory views collaboration as a dynamic and integrated system. It focuses on three key drivers: Collaborative Dynamics (collective action), Capacity for Collective Action (resources and leadership), and Adaptation to changes in the external environment.

The next expert is Chrislip and Larson (1994) with their theory of Collaboration as a Strategic Partnership. For them, collaboration is a different way of thinking and working. It is not simply coordination, but rather an effort to create a shared vision to solve complex problems that cannot be solved by one agency alone. Their theory emphasizes Collaborative Leadership, which functions as a facilitator, not a commander.

Meanwhile, Emerson and Nabatchi (2015) with their theory of Collaboration for Public Value links collaboration to the effectiveness of achieving public goals. They argue that good collaboration must be able to produce "added value" that cannot be achieved through siloed work. In this theory, the success of collaboration is measured by the extent to which actors are able to conduct resource pooling (combining resources) fairly and transparently.

When linked to the MSIA (Mapalus Spiral Integrative-Adaptive) model identified by the researchers, theoretically, cross-sectoral collaboration in UKS management in North Minahasa refers to the thinking of Ansell and Gash (2008) regarding the importance of inclusive institutional design, and is supported by the framework of Emerson et al. (2012), which emphasizes adaptation and capacity for collective action. The MSIA model exists to bridge the dynamics of this collaboration by integrating local Mapalus values as key social capital.

In addition to collaborative governance and policy experts, experts in management and education administration are also relevant to the findings of this study. For example, Fred C. Lunenburg & Allan C. Ornstein (2012), with their book, *Educational Administration*, in their *School Organizational Systems Theory*, view schools as Open Systems. Based on this theory, schools cannot stand alone; they must continuously interact with the external environment (government, health services, and the community) to survive. If cross-sectoral interactions (UKS) are disrupted, the school system will experience "entropy," or a decline in the quality of student health services due to the lack of external input.

Edward Sallis (2002), with his *Total Quality Management (TQM) in Education*, emphasized that quality in education is not just about learning outcomes, but also about customer satisfaction (students and parents) and continuous improvement. The core of his theory is that educational quality must encompass both soft (culture/values) and hard (facilities) aspects. A key point relevant to the findings of this study is the implementation of continuous improvement, whereby school health and safety management (UKS) must continuously improve in an evolutionary, not static, manner.

Bolman & Deal (2017), with their book *"Reframing Organizations" (Four Leadership Frames)*, argue that educational leaders must view problems through four frames: Structural, Human Resources, Political, and Symbolic. The core of their theory is that failure often occurs because leaders use only one frame (for example, only structural/rules). The relevance of this theory to the research findings, namely "Bureaucratic Ritualism," is evidence of leadership that focuses too much on the Structural frame (only SE) while neglecting the Political (budget distribution) and Symbolic (MAPALUS values) frames.

The next expert is Peter Senge (1990) with his book *"The Fifth Discipline" (Learning Organization)*. Senge introduced the concept of Systems Thinking in organizations. The core of his theory is that problems cannot be solved partially (in silos). There must be a "systems understanding" that student health (Health Office) directly impacts academic achievement (Education Office). The relevance of this theory to research findings lies in its primary support for the Silo Mentality argument and its proposed solution: to transform learning organizations into an integrative whole.

### **Dynamics of Power Relations, Bureaucratic Barriers, and Resource Pooling**

Research findings demonstrate the strong phenomenon of "Silo Mentality" (sectoral ego) as a bureaucratic barrier, where agencies tend to limit themselves to their core duties and view UKS as a burden on other sectors. The finding of a chronic budget gap in public schools supports Agranoff's (2007) view that without a legal resource pooling mechanism, public organizations will become trapped in bureaucratic ritualism.

Regarding the silo mentality as a bureaucratic barrier, the following expert views are presented. For example, Phil S. Ensor (1988) was the first expert to popularize the term "Silo" to describe a rigid functional organizational structure resembling a tall, windowless grain storage tank (silo) on a farm. This theory explains that units within an organization tend to become "siloesd"

informationally, where communication flows only vertically (upward and downward within a unit) but is blocked horizontally (across units).

Gleeson and Rozo (2013) define silo mentality as a mindset that arises when certain departments or units within an organization are unwilling to share information or knowledge with other units. They argue that this phenomenon often begins at the top of management and trickles down, creating a fragmented work culture where each unit feels it has a different goal than the larger organizational objective.

Patrick Lencioni (2006) views silos as a metaphor for departments operating separately, often in competition with one another, rather than working together toward a shared vision. He emphasizes that silos arise from a lack of aligned direction from leaders, resulting in staff at the operational level not understanding how their roles contribute to the big picture.

Therefore, within the framework of governance, cross-sectoral collaboration in the implementation of the School Health Unit (UKS) is crucial for UKS administrators to consider because of its impact. This is reinforced by Kettl (2003), who observed that silo mentality results in coordination failures in addressing complex, cross-sectoral issues (such as school health). When government agencies are trapped in silos, they focus on their own internal budgets and targets, which often conflict with each other and hinder the effectiveness of public services.

Peter Senge (1990), in the context of systems thinking failures, views silos as an organization's failure to recognize the interconnectedness of its components. If education and health units fail to recognize that the performance of one component impacts others, the organization will experience inefficiency and lose its ability to adapt to environmental changes.

Therefore, this finding critiques the efficiency principle in Osborne's (2010) *New Public Governance*. Although Osborne emphasizes partnerships, the reality on the ground shows that the lack of a central budget forces unplanned student self-help (providing cotton pads/betadine). This contradicts the state's obligation to guarantee minimum standards of school health services. This systemic neglect demonstrates that regional education management has yet to implement Peter Senge's (1990) *Systems Thinking*, which emphasizes the understanding that student health directly impacts the output of the education system as a whole.

The discussion presented above demonstrates that the phenomenon of sectoral egos found in the implementation of the Health Education Unit (UKS) in North Minahasa is a clear manifestation of the Silo Mentality. As Ensor (1988) explained, a rigid bureaucratic structure has created a silo of information that causes the Department of Education and the Department of Health to operate in their own silos. This is exacerbated by a lack of a shared vision (Lencioni, 2006), resulting in the UKS being viewed as a burden on other sectors rather than as a collective responsibility for creating public value.

Furthermore, research findings on resource pooling within the context of power dynamics can be explained based on its conceptual foundation: the dynamics of power relations in resource pooling, and the shift in power. From a conceptual perspective, resource pooling within power relations refers to the practice of combining individual resources, such as income, assets, knowledge, or expertise, into a single pool. Power relations dynamics emerge when this pooling alters the interdependence between collaborating parties. This is supported by the Interdependence Theory developed by Kelley & Thibaut (1978), which defines power relations through the degree of dependency. Resource pooling, particularly full financial pooling, often increases interdependence and promotes shared goals, potentially reducing the dominance of one party compared to separate financial management systems.

Viewed from the perspective of power relations in resource pooling, it operates through a mechanism of reducing individual dependency, namely when resources are combined, an

individual's dependence on others for personal needs is reduced, which according to Emerson (1962) in Power-Dependence Theory, reduces the power of one party to dominate. The next mechanism is justice and equality (equity) (Walster, Walster, & Berscheid, 1978) which emphasizes that couples often strive to achieve equity, where the ratio of inputs (resources) and outputs (results/power) is balanced. Pooling resources that are managed together often results in a more equal (egalitarian) relationship than resources that are separated.

From a power-shifting perspective, this can be analyzed through Power Resource Theory (Korpi, 1978), which initially focused on social class. This theory asserts that actors' power (including within relationships) depends on the mobilization of their resources. Resource pooling is a form of collective resource mobilization to enhance collective bargaining power, even in the workplace or household. Next, Michel Foucault's (1980) perspective on power/knowledge relations states that, although resource pooling appears to be a technical agreement, in Foucault's view, power is ubiquitous and dispersed. The pooling of resources (money/knowledge) creates a new network of relationships in which the "truth" about how resources are used is shaped by those who control the discourse within the family or organization.

Thus, it can be concluded that resource pooling does not necessarily eliminate power relations, but rather shifts them from individual domination to collective negotiation. Those who control the "pool" (whether money or decision-making) will have more power, but overall, pooling tends to increase interdependence. Resource pooling doesn't necessarily eliminate power relations, but rather shifts them from individual domination to collective negotiation. Those who control the "pool" (both financially and in decision-making) will have more power, but overall, pooling tends to increase interdependence.

### **Development of a Local Wisdom-Based School Health Unit Governance Model (Mapalus)**

The findings of this study successfully reconstructed and operationalized the Spiral Integrative-Adaptive (SIA) Model developed by Lengkong (2026). While the SIA Model was originally designed as a macro-strategic management framework to address VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) turbulence, in this study, the SIA model was reconstructed into the Mapalus Spiral Integrative-Adaptive (MSIA) or Mapalus Spiral Integrative-Adaptive Model. This MSIA Model is a specialized model for resolving the impasse in cross-sectoral collaborative governance in the implementation of School Health Units in North Minahasa.

The MSIA Model identified in this study has strong ontological relevance to the SIA Model (Lengkong, 2026) and validates that Mapalus possesses managerial dimensions encompassing reciprocity, collective responsibility, and discipline (Rumbay et al., 2022). This strongly supports the argument that Mapalus is the "energy" that can drive rigid bureaucratic structures. Both reject the linear-mechanistic view and adopt a biological-organic perspective, where organizations are viewed as "pulsating organisms." The relevance and evolution of the SIA Model to the MSIA can be described in four pillars.

First, reflective sensing as the basis for findings. In accordance with the first pillar of SIA, this study conducted reflective sensing to read the field reality beyond formal administrative data. The results revealed "pseudo-collaboration" and "empty guest books," which underpinned the urgency of model reconstruction.

Second, harmonized design through unified data & budgeting, which concerns managerial harmonization realized in the MSIA through a unified data & budget solution. This is a direct response to "sectoral egos" that often-separate education and health interests.

Third, agile execution in urban & rural contexts, namely the execution flexibility promoted by the SIA model, translated into adaptive elements within the MSIA model. This model is not one-

size-fits-all, but rather agile in responding to differences in typologies: urban areas that focus on facilities and rural areas that focus on strengthening teacher capacity.

Fourth, continuous learning as a sustainability engine: In line with the learning organization theory (Senge, 2006) referred to in the SIA model, the Sustainable Growth pillar in MSIA ensures that every obstacle (such as the absence of a 5-year technical guidance) is transformed into learning fuel for improvement in the next cycle.

The transformation of Mapalus as a social technology is a finding of this study, positioning Mapalus not merely as a static cultural value, but as a Social Technology capable of reengineering collaborative governance. This utilization of local collectivity aligns with Putnam's (2000) concept of Social Capital, where bridging social capital strengthens policy effectiveness through strong networks of trust. This reinforces Lengkong's (2026) thesis that Mapalus is a "strategic pivot" that transforms technical procedures into collective school performance.

Furthermore, digital presence as a systemic bridge refers to the integration of digital data within the MSIA model, which functions as a Technological Affordance (Gibson, 1979; Hutchby, 2001). This research finding complements Lunenburg and Ornstein's (2012) theory of schools as open systems. As a solution, Digital Presence enables rural areas to overcome geographic barriers through real-time access to information, thereby creating equitable health services comparable to those in urban areas. This embodies the Organizational Intelligence pillar in the SIA model (Lengkong, 2026). Furthermore, the MSIA model facilitates this through its digital presence element, which creates data transparency. According to Castells (2010) in *The Rise of the Network Society*, the strength of future organizations lies in their ability to connect within networks (connectivity). Thus, the MSIA transforms schools from isolated entities into responsive and adaptive parts of the district's health "network society."

Regarding adaptive management and public value creation, the MSIA model rejects a one-size-fits-all approach. This model's adaptability to regional typologies supports adaptive leadership theory (Heifetz et al., 2009), which demands flexibility in addressing complex challenges. Critically, this model corrects the failure of traditional collaboration, which often falls into "pseudo-collaboration" (Ansell & Gash, 2008) due to bureaucratic rigidity.

Ultimately, through a spiral cycle of continuous learning (Senge, 2006), the MSIA model creates public value (Moore, 1995) by integrating cross-sector resources into a single, uninterrupted energy for growth. This model demonstrates that the effectiveness of educational management is determined by an organization's ability to generate collective resonance rooted in local wisdom.

Then, the MSIA models found in this study can be compared, as presented in Table 1.

**Table 1.** Comparative Synthesis of Conventional Governance vs. the MSIA Model

Dimensions of Analysis	Collaborative Governance (Ansell & Gash, 2008)	Linear Strategic Management (Wheelen & Hunger, 1995)	MSIA Model (2026) (Research Findings)
Philosophical Foundation	Institutional Design & Formality	Organization as a Machine (Mechanistic)	Mapalus as a Social Technology (Organic)
Communication Patterns	Face-to-Face Dialogue (Often Expensive & Slow)	Top-Down Instructional	Digital Presence (Real-Time & Systemic Bridge)
Adaptation Traits	Relying on Memorandum of	Static (5-Year Plan)	Integrative-Adaptive Spiral (Continuous Evolution)

Managing Egos	Sectoral	Understanding (MoU) Negotiation Interests	of Hierarki Jabatan	<i>Resource Pooling</i> berbasis Resiprositas Lokal
Regional Focus		Generalist (Generalized)	Sentralistik	<i>Regional Customization</i> (Urban vs Rural)

Referring to Table 1, the findings of this study indicate that the failure of UKS synergy in North Minahasa at the junior high school level is due to the use of an overly linear and formalistic management model. Critically, the researchers argue that Ansell and Gash's (2008) Collaborative Governance theory, while strong in institutional design, often loses its relevance in local contexts with significant geographic barriers if not supported by digital instruments.

This is where the MSIA Model presents a theoretical leap. Unlike Wheelen and Hunger's (1995) view of strategy as a static document, the MSIA model adopts the pillars of the Integrative-Adaptive Spiral (SIA) (Lengkong, 2026), which views governance as a "pulsing organism." The novelty of this model lies in its reconstruction of Mapalus. While in classical sociological literature, Mapalus is viewed solely as traditional social capital, in the MSIA model, Mapalus is redefined as Social Technology (Lengkong) capable of automatically triggering resource pooling mechanisms through the value of reciprocity.

Furthermore, this model addresses the challenge of information asymmetry between urban and rural areas through the pillar of digital presence. As reinforced by the theory of technological affordance (Hutchby, 2001), digitalization in MSIA is not merely an administrative tool, but rather a systemic closeness that allows for effective collaboration without being hampered by the physical distance between the Community Health Center and schools in remote areas of North Minahasa. The transformation of Mapalus into a managerial instrument is supported by Arthur's (2009) thinking in *"The Nature of Technology"*, which views technology not only as hardware but also as an organizational method for achieving human goals. Therefore, Mapalus in the MSIA model functions as a Social Technology that reengineers previously informal social interactions into measurable operational procedures. Related to the concept of systemic closeness, it aligns with the Network Governance theory of Jones, Hesterly, and Borgatti (1997). They argue that in complex network structures, coordination is no longer determined by rigid bureaucratic hierarchies, but rather by the strength of relationships and information exchange. Similarly, the adaptive nature of the MSIA model to regional typologies (Urban & Rural) can be explained through the concept of antifragility from Nassim Nicholas Taleb (2012). Taleb argues that a good system is one that actually becomes stronger when faced with pressure or disruption. Mapalus, which previously emerged as a response to the lack of budget (pressure), was transformed through MSIA into a systemic system. This model is not only resilient, but continues to grow (sustainable growth) because it is able to learn from the differences in regional characteristics. This is supported by Heifetz et al. (2009) in adaptive leadership, which emphasizes that complex challenges in the world of education can only be answered through continuous adjustment and the involvement of all stakeholders in the organizational learning process. That is why effective adaptive leaders are needed so that cross-sectoral collaborative governance between the Education Office and the Health Office in the implementation of UKS through Healthy Schools can create Indonesian children at the junior high school level who are healthy, strong, and intelligent with character.

Based on the discussion that has been conducted, the following five main dimensions of MSIA can be synthesized.

a. Mapalus is not merely ethics, but social technology.

MSIA is a distinctive collaborative governance model (fundamentally different) from conventional collaboration models. Western collaboration models often rely on Institutional Design (formal rules) and Facilitative Leadership. However, in North Minahasa, formal rules are often bogged down by bureaucracy. MSIA differentiates itself by placing Mapalus at the center. In MSIA, Mapalus is no longer viewed as a static "traditional mutual cooperation" but rather as a social technology (social algorithm). MSIA is the energy of reciprocity that compels every actor (Community Health Center, School, Department) to feel collective responsibility without having to wait for rigid hierarchical instructions.

b. Spiral: A counteraction to static linearity

Governance models are generally linear (Stage 1 → Stage 2 → Completion). Consequently, when the strategic plan document is completed, the collaboration is considered over. MSIA differentiates itself through the concept of the Spiral. Based on the SIA model (Lengkong, 2026), MSIA views collaboration as a "pulsing organism." MSIA moves in an evolutionary spiral where any failure or obstacle in one cycle (e.g., a budget gap) does not halt the process but rather fuels reflective sensing in the next round of the spiral. This ensures sustainable growth.

c. Integrative-Adaptive is the solution to bureaucratic "silo mentality" and regional asymmetry.

Many collaboration models fail because they are one-size-fits-all. MSIA differentiates itself by forcefully breaking down silo mentality through resource pooling and digital presence mechanisms (unification of data and resources), while Adaptive enables regional customization. MSIA recognizes that collaboration patterns in urban areas (city centers) cannot be equated with those in rural areas (rural/remote areas). This model provides space for leaders to be flexible or agile.

d. Differences between MSIA and other models

The differences between MSIA and other models can be seen in Table 2.

**Table 2.** Differences between MSIA and other models

<b>Dimension</b>	<b>General Collaboration Model</b>	<b>MSIA Model</b>
Driver Base	Incentives/Formal Rules	Philosophical Values of Mapalus (Reciprocity)
Process Nature	Linear/Fixed Stages	Spiral (Evolution & Continuous Learning)
Regional Response Standard (Generalist)		Adaptive (Urban vs. Rural Context)
Main Instruments	Physical Meetings/MoUs	Digital Presence (Systemic Bridge)

e. MSIA is not just a new name for an old collaborative governance model.

MSIA is an answer to the failure of rigid bureaucratic models. If other models are 'static maps,' then MSIA is an 'intelligent navigation system.' MSIA uses the local wisdom of Mapalus as its energy, a spiral system as its working principle, and digital technology as its path, to ensure that no junior high school student in North Minahasa misses out on school health services simply because of distance or sectoral egos.

## CONCLUSION

The research concludes as follows: Collaboration patterns are still found to be at the Bureaucratic Formalism stage, where interactions between agencies are only administrative-reactive. There is a contrasting disparity in responses; Urban schools are trapped in administrative

routines due to high workloads, Rural schools are geographically and informationally isolated, while Private schools tend to be autonomous but disconnected from the regional policy ecosystem. Overall, collaboration has not touched the substantial aspects of the UKS Trias and is only activated when there are national program instructions. The dynamics of power relations are still dominated by the acute Silo Mentality phenomenon (sectoral ego), where UKS is considered a "no man's land". This bureaucratic obstacle causes the failure of the Resource Pooling mechanism, resulting in a systemic Budgetary Gap. The implication is that schools are forced to resort to informal self-help to meet basic medical needs, which proves that the Regency's Universal Health Coverage (UHC) predicate has not been fully integrated into the smallest unit in the school. This model transforms the philosophical values of Mapalus into "Social Technology" that breaks down bureaucratic barriers. With the Digital Presence pillar as a systemic bridge and the Unified Data & Budget mechanism, the MSIA model offers a dynamic (Spiral), integrated (Integrative), and adaptive management solution, thus ensuring the sustainability of cross-sectoral policy synergy.

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