

## Academic Supervision by School Principals on Learning Tools in Border Areas, West Kalimantan

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**Abstract:** This research delves into the academic supervision in Ketungau Hulu sub-district, Sintang Regency, West Kalimantan. The study employed descriptive methodology, encompassing interviews and questionnaires. Data was gathered from 3 out of 10 junior high schools situated in proximity to the border. 3 principals and 3 teachers were interviewed, with 25 teachers participating in the survey. Based on data analysis, 90% completion rate for resources, 77.33% for resources, below 90% for teacher guides and schedules. Principals effectively supervised academics (above 90% completion rate) and created supervision schedules (88% completion rate). Room for improvement in academic supervision tools, currently at 89.33% completion rate. Based on interviews, academic supervision varies based on teachers' readiness. Educators reduce apprehension by being familiar with supervision. Teachers adapt to technological constraints by using basic media. Teachers and principals collaborate post-supervision to address issues. Some teachers participate in MGMP activities, while financial and geographical constraints limit others. Principals' supervision planning needs enhancements for consistent oversight. Overcoming obstacles like technological limitations is crucial. Post-supervision evaluations and follow-up procedures are effectively executed. More effort is needed to ensure all teachers have training opportunities to enhance their competencies.

**Keywords:** Academic Supervision, Principal, Education, Learning Device, Border Region

Improving education quality and equity in border areas is crucial (Muri'ah, 2018; Rupita, 2019). This aligns with the 1945 Constitution Article 31 and Law No. 20/2003 Article 4 on national education principles. Ketungau Hulu sub-district faces significant accessibility challenges due to its remote location. The North and Central Kalimantan Axis roads, which span 160.6 and 348.9 km respectively, have deteriorating asphalt surfaces and treacherous muddy paths. The North Axis road is susceptible to floods, while the Central Axis road is preferred for commuters. These obstacles hinder the achievement of regional educational standards. The map of Ketungau Hulu sub-district is displayed in Figure 1.



Many principals lack academic supervision understanding to develop programs (Utamingtyas, Hanafi and Suherman, 2023; Saleh *et al.*, 2020; Gunawan, Benty and Wardani, 2023).

This research examines the planning, implementation, and follow-up of academic supervision on 12 components of learning tools (Santosa and Nusyirwan, 2019). The goal is retrieve detailed data for every component. Limited research on academic supervision in West Kalimantan Province, particularly in border areas. Thus, Ketungau Hulu District is crucial for its complex research problems (Sanoto *et al.*, 2021; Juniwan, Sabri and Rosita, 2023). Previous research examined syllabus, lessons, teachers' and students' books, and the quality of learning tools (Simamora and Sudarma, 2017; Lalupanda, 2019; Zulfakar, Lian and Fitria, 2020; Gulo, 2020; Juniwan, Sabri and Rosita, 2023). This research investigates school principals' academic supervision planning, implementation, and follow-up in border areas of Ketungau Hulu District.

The issue formulations in this study, as described above, are: 1) how is the planning of school principals' academic supervision of learning devices in border areas of Ketungau Hulu District, Sintang Regency; 2) how well the principals' academic supervision is implemented in border areas of Ketungau Hulu District, Sintang Regency; and 3) how well the principals' academic supervision is followed up in border areas of Ketungau Hulu Subdistrict, Sintang Regency.

## **METHOD**

This research uses a scientific approach with qualitative and quantitative methods, validated instruments, analyses for validity and reliability, and identifies the limitations. Qualitative research describes phenomena holistically in natural contexts and Quantitative research uses statistics to produce findings. The research is conducted at 3 out of 10 junior high schools closest to the border: SMP Negeri 3, SMP Negeri 5, and SMP Negeri 8. The research involves principals and teachers at these schools. The researcher created a flowchart outlining the research stages. The research flow chart is presented in Figure 2. The research instruments include interview guidelines, questionnaires on learning tools completeness (LTC), and questionnaires on academic supervision (AS). Feasibility test covers reliability, construct validity, empirical validity, and reliability. Five experts evaluate research instruments; three are education lecturers with NIDN (Nomor Induk Dosen Nasional), two are from the Junior High School Development Division in Sintang District Education and Culture Office.

The expert validation results were analyzed using *Aiken's Value* for instrument validity and *Intraclass Correlation Coefficients (ICC)* for reliability testing (Aiken, 1985; Tomoliyus and Sunardianta, 2020; Mehta *et al.*, 2018). The validity test criteria using *Aiken's Value* are presented in Table 2.

**Table 2. Validity criteria using Aiken's Value**

No.	Criteria	Validity
1	$0.80 < V \leq 1.00$	Very High
2	$0.60 < V \leq 0.80$	High
3	$0.40 < V \leq 0.60$	Medium
4	$0.20 < V \leq 0.40$	Low
5	$0.00 < V \leq 0.20$	Very Low

(Tomoliyus and Sunardianta, 2020)

The results of the validity test using Aiken's Value are presented in Table 3, Table 4 and Table 5.

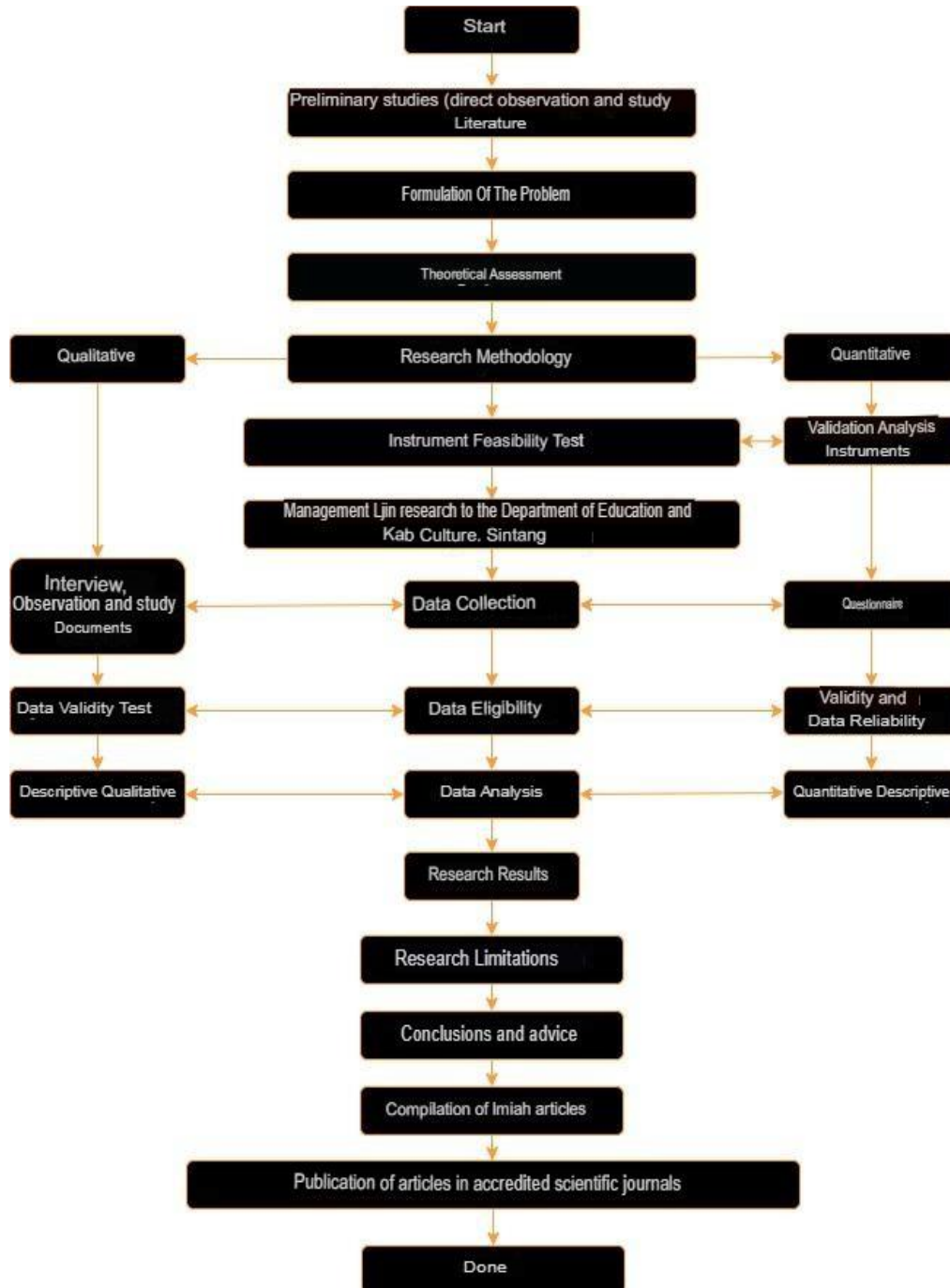


Figure 2. Research Flow Chart

**Table 3. Aiken's Value Results for the Interview Guidelines**

No.	Aspects	Item	Aiken's Value	Validity
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1	Academic Supervision Planning by Principals	1	1.00	Very High
		2	1.00	Very High
		3	1.00	Very High
		4	0.73	High
		5	1.00	Very High
2	Implementation of Academic Supervision by the Principal	6	0.80	High
		7	1.00	Very High
		8	1.00	Very High
		9	1.00	Very High
		10	1.00	Very High
3	Follow-up of Academic Supervision by the Principal	11	1.00	Very High
		12	0.80	High
		13	0.93	Very High
4	Language used in the Interview Guidelines	1	1.00	Very High
		2	1.00	Very High
		3	0.80	High
<b>Average</b>			<b>0.94</b>	<b>Very High</b>

(source: Researcher Processed Data (RPD), 2024)

Based on Table 3, the interview guideline instrument has an *Aiken's Value* of 0.94 which is included in the very high validity category and proven to be suitable for use.

**Table 4. *Aiken's Value* Results for the LTC Questionnaire**

No.	Aspects	Item	<i>Aiken's Value</i>	Validity
1	Questionnaire Instructions and Identity	1	1.00	Very High
		2	0.80	High
2	Academic Supervision Planning by Principals	1	1.00	Very High
		2	1.00	Very High
		3	1.00	Very High
		4	1.00	Very High
		5	0.93	Very High
3	Implementation of Academic Supervision by the Principal	6	1.00	Very High
		7	0.80	High
		8	1.00	Very High
		9	0.80	High
		10	1.00	Very High
4	Follow-up of Academic Supervision by the Principal	11	1.00	Very High
		12	1.00	Very High
5	Language used in the Questionnaire	1	0.80	High
		2	1.00	Very High
		3	1.00	Very High
<b>Average</b>			<b>0.95</b>	<b>Very High</b>

(source: RPD, 2024)

Based on Table 4, the questionnaire instrument for the LTC has an *Aiken's Value* of 0.95 which is included in the very high validity category and is proven to be suitable for use.

**Table 5. *Aiken's Value* Results for the AS Questionnaire**

No.	Aspects	Item	<i>Aiken's Value</i>	Validity
1	Questionnaire Instructions and Identity	1	1,00	Very High
		2	1,00	Very High
2	Academic Supervision Planning by Principals	1	1,00	Very High
		2	1,00	Very High
		3	0,80	High
		4	1,00	Very High
		5	0,80	High
3	Implementation of Academic Supervision by the Principal	6	1,00	Very High
		7	1,00	Very High
		8	1,00	Very High
		9	0,80	High

		10	1,00	Very High
4	Follow-up of Academic Supervision by the Principal	11	1,00	Very High
		12	1,00	Very High
		13	1,00	Very High
		Average		
5	Language used in the Questionnaire	1	1,00	Very High
		2	0,80	High
		3	1,00	Very High

(source: RPD, 2024)

Based on Table 5, the AS questionnaire instrument has an Aiken's Value of 0.96 which is included in the very high validity category and is proven to be suitable for use.

Furthermore, the instrument reliability test used the ICC. The reliability test criteria using ICC are presented in Table 6.

**Table 6. Reliability criteria using ICC**

No.	ICC	Criteria
1	ICC < 0.4	Bad
2	0.40 ≤ ICC < 0.75	Good enough
3	ICC ≥ 0.75	Good

(Ismunarti et al., 2020)

The ICC reliability test was conducted using SPSS 16.0 software and the results are presented in Figure 2, Figure 3 and Figure 4.

**Intraclass Correlation Coefficient**

	Intraclass Correlation <sup>a</sup>	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig.
Single Measures	.455 <sup>a</sup>	.232	.707	5.055	15	60	.000
Average Measures	.807 <sup>c</sup>	.601	.924	5.055	15	60	.000

- Two-way mixed effects model where people effects are random and measures effects are fixed.
- Type A intraclass correlation coefficients using an absolute agreement definition.
  - The estimator is the same, whether the interaction effect is present or not.
  - This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

Figure 2. SPSS 16.0 output on the ICC reliability test for the interview guide instrument

Based on Figure 2, the interview guideline instrument has an ICC value of 0.807 in the average measures, indicating good agreement between raters. This demonstrates good reliability.

**Intraclass Correlation Coefficient**

	Intraclass Correlation <sup>a</sup>	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig.
Single Measures	.388 <sup>a</sup>	.181	.644	4.381	16	64	.000
Average Measures	.760 <sup>c</sup>	.525	.901	4.381	16	64	.000

- Two-way mixed effects model where people effects are random and measures effects are fixed.
- Type A intraclass correlation coefficients using an absolute agreement definition.
  - The estimator is the same, whether the interaction effect is present or not.
  - This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

Figure 3. SPSS 16.0 output on the ICC reliability test for the LTC questionnaire instrument

Based on Figure 3, the LTC questionnaire instrument has an ICC value of 0.760 in the average

measures section. It categorized as a good agreement between raters. Thus, the reliability is proven.

Intraclass Correlation Coefficient							
	Intraclass Correlation <sup>a</sup>	95% Confidence Interval		F Test with True Value 0			
		Lower Bound	Upper Bound	Value	df1	df2	Sig
Single Measures	.443 <sup>b</sup>	.235	.681	5.091	17	68	.000
Average Measures	.799 <sup>c</sup>	.606	.914	5.091	17	68	.000

Two-way mixed effects model where people effects are random and measures effects are fixed.

a. Type A intraclass correlation coefficients using an absolute agreement definition.

b. The estimator is the same, whether the interaction effect is present or not.

c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise.

Figure 4. SPSS 16.0 output on the ICC reliability test for the AS questionnaire instrument

Based on Figure 4, ICC value of 0.799 in the average measures section shows good agreement between raters. This indicates good reliability for the AS questionnaire. The research instruments are valid, reliable, and feasible for use.

### Data Collection

Data was collected at three junior high schools in Ketungau Hulu sub-district, Sintang district, near the Indonesia-Malaysia border. Table 7 provides a list of informants and respondents.

Table 7: Research sources and respondents

No.	School	Location	Position	Total	Description
1	SMP Negeri 3 Ketungau Hulu	Sebadak Village	Principal	1	Interview
			Teacher	1	Interview and Questionnaire
			Teacher	9	Questionnaire
2	SMP Negeri 5 Ketungau Hulu	Service Village	Principal	1	Interview
			Teacher	1	Interview and Questionnaire
			Teacher	9	Questionnaire
3	SMP Negeri 8 Ketungau Hulu	Sungai Seria Village	Principal	1	Interview
			Teacher	1	Interview and Questionnaire
			Teacher	6	Questionnaire

(Source: RPD, 2024)

Based on Table 7, 6 resource persons were identified - 3 principals and 3 teachers. Table 6 shows 25 questionnaire respondents who were teachers from three schools.

### Data Eligibility Test

Qualitative data eligibility tests include credibility, transferability, dependability, and confirmability through various methods like observation, triangulation, and member checks (Sugiyono, 2017). Tests done alongside data analysis.

The research examined how principals supervise teachers' learning tools through preliminary observations, social approaches, in-depth interviews, and document review. Data was gathered through interviews, observations, questionnaires, and audio/photos recorded. Narratives presented qualitative data with the principal as implementer and the teacher as target. The research process was documented, ensuring a proven track record and confirmability by publishing results in scientific journals. The

research passed the credibility, transferability, dependability, and confirmability test based on the presented facts.

Quantitative data feasibility tested with *Pearson's Product-Moment (PPM)* for validity and *Cronbach's Alpha (CA)* for reliability (Supriadi, 2021; Jugessur, 2022). Data obtained from questionnaires for Learning Tool Completeness (LTC) and Academic Supervision (AS).

*PPM* validity test was conducted using SPSS 16.0 software on questionnaire data. The number of respondents is 25 ( $N = 25$ ), resulting in  $r_{\text{tabel}}$  of 0.395. Decision-making criteria are determined in two ways: 1) Comparing  $r_{\text{count}}$  with  $r_{\text{tabel}}$ , declaring validity if  $r_{\text{count}} > r_{\text{tabel}}$  and invalidity if  $r_{\text{count}} < r_{\text{tabel}}$ ; or 2) Comparing *Sig. (2-tailed)* with a probability of 0.05, declaring validity if *Sig. (2-tailed)*  $< 0.05$  and  $r$  is positive, declaring invalidity if *Sig. (2-tailed)*  $< 0.05$  and  $r$  is negative, and declaring invalidity if *Sig. (2-tailed)*  $> 0.05$  (Supriadi, 2021).

The *PPM* validity test output is then recapitulated and presented in Table 8 and Table 9.

**Table 8. PPM validity test results on the LTC questionnaire**

No Item	$r_{\text{count}}$	Decision	Criteria
1	0.813		Valid
2	0.813		Valid
3	0.498		Valid
4	0.813		Valid
5	0.425		Valid
6	0.551		Valid
7	0.696	$r_{\text{count}} > 0.395$	Valid
8	0.715		Valid
9	0.563		Valid
10	0.409		Valid
11	0.464		Valid
12	0.435		Valid

(source: RPD, 2024)

Based on Table 8 data, all questionnaire items for LTC are valid and feasible. The data collected is suitable for analysis.

**Table 9. PPM validity test results on AS questionnaire**

No. Item	$r_{\text{count}}$	Decision	Criteria
1	0.439		Valid
2	0.810		Valid
3	0.465		Valid
4	0.538		Valid
5	0.562		Valid
6	0.468		Valid
7	0.531	$r_{\text{count}} > 0.395$	Valid
8	0.468		Valid
9	0.605		Valid
10	0.517		Valid
11	0.605		Valid
12	0.605		Valid
13	0.497		Valid

(source: RPD, 2024)

Based on Table 9 data, all items in the AS questionnaire are valid and suitable. Data collected using the instrument is suitable for analysis.

The questionnaire reliability test in this study used *Cronbach's Alpha*. The decision- making

criteria are determined by: 1) If the *CA* value > 0.60, then the questionnaire is declared reliable or consistent; and 2) If the *CA* value < 0.60, then the questionnaire is declared unreliable or inconsistent (Kurnianto and Mundilarto, 2023).

The *CA* reliability test was conducted using SPSS 16.0 software. Results are presented in Figures 5, 6, 7, and 8.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.799	12

Figure 5. SPSS 16.0 output on the *CA* reliability test for the LTC questionnaire instrument

Based on Figure 4, the LTC questionnaire has a *CA* value of 0.799. These results indicate that the tool is reliable and consistent.

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
item_1	30.28	7.377	.751	.768
item_2	30.28	7.377	.751	.768
item_3	30.44	7.257	.484	.780
item_4	30.28	7.377	.751	.768
item_5	30.44	7.673	.298	.798
item_6	30.56	7.257	.412	.788
item_7	30.36	7.240	.598	.772
item_8	30.44	6.840	.681	.761
item_9	30.24	7.940	.535	.787
item_10	30.48	7.260	.451	.783
item_11	30.52	7.427	.358	.793
item_12	30.88	7.110	.194	.844

Figure 6. SPSS 16.0 output on the *CA* reliability test for each statement item in the LTC questionnaire instrument.

Figure 6 shows the reliability of each item presented in the item-total statistics section, in the *Cronbach's Alpha if Item Deleted* column.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.826	13

Figure 7. SPSS 16.0 output on *CA* reliability test for AS questionnaire instrument

Based on Figure 7, the AS questionnaire has a *CA* value of 0.826, indicating reliability. The questionnaire for LTC is proven to be reliable and consistent.

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
item_1	33.60	7.583	.265	.827
item_2	33.84	6.223	.701	.792
item_3	33.68	6.810	.563	.806
item_4	33.80	7.000	.377	.823
item_5	33.68	7.143	.397	.820
item_6	33.76	6.857	.463	.815
item_7	33.72	7.127	.370	.823
item_8	33.76	6.523	.617	.801
item_9	33.52	7.593	.493	.817
item_10	33.56	7.340	.507	.813
item_11	33.52	7.593	.493	.817
item_12	33.52	7.593	.493	.817
item_13	33.80	6.500	.597	.803

Figure 8. SPSS 16.0 output on the CA reliability test for each statement item in the AS questionnaire instrument.

Based on tests, all data collection instruments in this research are valid and reliable. The research data collected is also valid and reliable.

### Data Analysis

The stages of qualitative data analysis are: data condensation, data presentation, and conclusion drawing (Jugessur, 2022; Miles, Huberman and Saldana, 2014). Quantitative data from the questionnaire analyzed using non-parametric statistics for categorization needs.

## RESULT AND DISCUSSION

### RESULTS

This research examines academic supervision of learning tools including planning, implementation, and follow-up. Results of the LTC questionnaire are in Table 10, while the AS questionnaire results are in Table 11.

**Table 10: Questionnaire results for LTC**

No. Item	Description	Yield (%)
1	Completeness of Annual Program	97.33
2	Completeness of Semester Program	97.33
3	Completeness of Syllabus or Flow of Learning Objectives (ATP)	92.00
4	Completeness of Learning Implementation Plan (RPP) or Teaching Module	97.33
5	Availability of Education Calendar	92.00
6	Completeness of Face-to-Face Schedule	88.00
7	Completeness of Daily Agenda	94.67
8	Completeness of Grade List	92.00
9	Availability of Minimum Completeness Criteria (KKM) or Minimum Learning Completeness (KBM)	98.67
10	Completeness of Student Attendance	90.67
11	Teacher Handbook Availability	89.33
12	Availability of Student Handbooks	77.33

(source: RPD, 2024)

Based on Table 10, most teachers completed learning tools at over 90%. Student handbooks are least complete at 77.33%. Teachers' handbooks and face-to-face schedules are below 90%.

**Table 11: Questionnaire results for AS**

No.	Aspects	Item	Description	Yield (%)
1	Planning academic supervision by the principal	1	The principal has an academic supervision program.	96.00
		2	The principal has created an academic supervision timetable.	88.00
		3	Academic supervision programs by school principals are socialized.	93.33
		4	Academic supervision by the Principal has a clear measuring tool.	89.33
		5	The principal has a clear procedure for implementing academic supervision.	93.33
2	Implementation of academic supervision by the principal	6	The implementation of academic supervision by the Principal needs to be carried out regularly.	90.67
		7	The principal has a clear technique for implementing academic supervision.	93.33
		8	Implementation of academic supervision by the Principal in accordance with procedures.	92.00
		9	The implementation of academic supervision by the Principal provides benefits.	98.67
		10	The implementation of academic supervision by the Principal does not make teachers stressed.	97.33
3	Follow-up of academic supervision by the principal	11	The Principal conducts academic supervision followed by evaluation.	98.67
		12	There are various kinds of follow-up to the results of the evaluation of academic supervision by the Principal.	98.67
		13	The instrument of academic supervision by the Principal is always improved as needed	89.33

(source: RPD, 2024)

Based on Table 11, most respondents said the principal implemented all aspects of academic supervision. Over 90% agreed, except for two statements. The lowest percentage was 88.00% for preparing the schedule. Improving supervision instruments got 89.33%.

### **Planning Academic Supervision by the Principal**

Academic supervision planning varies based on teacher readiness. Researchers found a lack of consistent schedule, with supervision occurring every six months or once a semester, with half of the teachers given priority. Socialization is done 3 days to a week before supervision.

### **Implementation of Academic Supervision by the Principal**

Teachers are accustomed to supervision, with subject teachers having a month to prepare materials. Principals encourage participation based on teachers' abilities, but schools face challenges due to inadequate facilities, infrastructure, limited technological media use, limited teacher handbooks, and unprepared teachers. Regardless, students and teachers are used to the principal's presence during class supervision. The learning atmosphere ran smoothly. Despite technological limitations, teachers use simple media, and students stay enthusiastic in learning.

### **Follow-up of academic supervision by the principal**

Teachers and principals collaborate to address issues and maintain positive aspects of learning.

Principals enhance learning tools, improve quality, support teacher innovations and provide resources for the Merdeka Curriculum in grades 7 and 8.

Academic supervision activities were conducted, but no special training on learning tools was provided. Principals reminded teachers to prepare lessons each semester and encouraged participation in subject teacher meetings (MGMP) to improve competencies. However, some teachers were unable to participate due to financial constraints and distance. Principals emphasized the importance of well-equipped teachers.

Regarding academic supervision instruments, the system is under development. Categories include sufficient, good, deficient, and recommendations for improvement. Challenges include limited facilities affecting the supervision process. Limited facilities pose challenges in supervision. Principal seeks district office help and welcomes yearly supervisor visits.

## **DISCUSSION**

Effective academic supervision planning ensures complete learning tools and implementation. 96% noted principals have a supervision program, 93.33% find socialization effective, with 88% suggesting improvements in creating a supervision schedule.

Academic supervision theory prioritizes detailed planning for optimal outcomes (Glanz and Zepeda, 2016; Setyawati *et al.*, 2022). A tailored supervision approach meets teachers' needs effectively (Glickman, Gordon and Oss-Gordon, 2017), Meanwhile Flexible supervision supports teachers based on their circumstances.

The research reveals that 98.67% of teachers benefit from academic supervision, while 97.33% not feeling pressured, appreciate a supportive atmosphere without direct criticism. Principals who avoid confrontation allow teacher growth and feedback openness (Zepeda, 2016).

Challenges in technology use due to infrastructure limitations are crucial for learning innovation (Donoghue and Hattie, 2021). Academic supervision follow-up yields positive results with 98.67% stating evaluation and follow-ups for improvement. Continuous evaluation and improvement are essential for teaching quality enhancement (Mbawala and Hermanto, 2023).

Principals encourage teachers to participate in MGMP for sharing best practices. However, cost and distance constraints prevented teachers from fully participating in the program. Professional development should be equally accessible to all teachers (Darling-Hammond *et al.*, 2024).

## **CONCLUSION AND SUGGESTION**

### **CONCLUSION**

Based on findings, the research comes to a conclusion, namely: 1) Most academic supervision planning by principals is satisfactory, but 88% find it well-organized. 2) Academic supervision is effective, with principals fostering a supportive atmosphere for teaching improvement, despite limitations hindering digital media-based supervision; 3) Follow-up well implemented, with post-supervision

evaluations and corrective actions taken. Full participation in professional development programs like MGMP remains a challenge for teachers due to cost and distance.

## SUGGESTION

Based on the conclusions, The research suggests: 1) Principals improve academic supervision planning; 2) Schools equip classrooms with tech support; and 3) Ensure equal teacher training access for improvement.

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