ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 11| Issue: 8| August 2025|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2025: 8.691 || ISI Value: 1.188

INSTRUCTIONAL SCAFFOLDING AND METACOGNITIVE STRATEGIES OF LANGUAGE TEACHERS IN PUBLIC SECONDARY SCHOOLS

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Article DOI: https://doi.org/10.36713/epra23852
DOI No: 10.36713/epra23852

ABSTRACT
This study aimed to determine the level of instructional scaffolding and the use of metacognitive strategies among teachers in public secondary schools in Caraga District, Division of Davao Oriental. A non-experimental quantitative research design employing the correlational method was utilized. The study's respondents consisted of 142 teachers from public secondary schools in Caraga District, selected through universal sampling to ensure full representation. Data were analyzed using the mean, Pearson correlation coefficient (r), and regression analysis. The findings revealed that both the level of instructional scaffolding and the use of metacognitive strategies among teachers were generally high. Furthermore, the study established a significant positive relationship between instructional scaffolding and teachers' use of metacognitive strategies. Regression analysis also indicated that the domains of instructional scaffolding significantly influenced the use of metacognitive strategies among teachers in public secondary schools. Based on these findings, it is recommended that teachers continue to enhance instructional scaffolding and metacognitive strategies in their practice. Particular emphasis should be placed on implementing short-cycle formative assessments to monitor student progress throughout lessons. Additionally, fostering a teaching culture that prioritizes attention to effective instructional practices can contribute to professional growth and create an environment in which high-quality teaching is consistently valued.

KEYWORDS: *Instructional Scaffolding, Metacognitive Strategies, Language Teachers, Public Secondary Schools, Philippines*

1. INTRODUCTION
Efficient teachers often employ metacognitive strategies to guide learning, yet students with learning disabilities frequently lack the skills necessary to regulate and direct their own learning effectively. However, once these students are taught the metacognitive strategies used by proficient teachers, they can apply these techniques across a variety of tasks and contexts. To become effective learners, students must not only utilize their existing memory and language skills but also develop personalized strategies for learning. By learning how to learn, students gain greater control over their cognitive processes, gradually enhancing their ability to monitor, regulate, and master their thinking. A student's inner language is fundamental to developing the higher-order cognitive skills associated with metacognition.

In New York, research has shown that metacognitive strategies enable students to become more active participants in their own learning, mobilizing all available resources to achieve success. Effective metacognitive engagement requires students to understand their own learning processes and be aware of the steps, strategies, and methods necessary to acquire knowledge, solve problems, and complete tasks. Metacognition, defined as "thinking about thinking," allows learners to plan, monitor, and evaluate their learning. For example, proficient readers use metacognition before reading by clarifying their purpose and previewing the text (Gagné, 2019).

In practical terms, metacognitive strategies involve awareness and understanding of one's own cognitive processes. Examples include: identifying strategies that aid memory for facts, names, and events; recognizing individual learning styles; and selecting the most effective approaches to solve problems. As students become more aware of their strengths and weaknesses, they gain autonomy in learning and develop the understanding that success depends on the effort they invest and the strategies they implement. Consequently, their ability to regulate cognitive processes improves, and their self-confidence and self-concept are strengthened. Students with language difficulties, in particular, can enhance their learning outcomes by employing metacognitive strategies (Alibali, 2019).

In the Philippines, Morin (2021) emphasized that metacognition involves reflective thinking before, during, and after a learning task. It begins with planning the strategies to be employed, continues with selecting the most effective strategies for the task, and concludes with evaluating whether the outcome meets the intended standards. Adequate time to teach a range of strategies

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is essential, as students must learn to choose the appropriate strategy for each task.
In Davao Oriental, instructional scaffolding has been recognized as a key strategy to support metacognitive development. Similar to scaffolding used in construction, instructional scaffolds are temporary support structures that help students accomplish tasks and grasp concepts they could not achieve independently. Once students master the task, scaffolding is gradually removed, shifting the responsibility for learning from the teacher to the student. Scaffolded instruction provides a supportive environment where students can ask questions, offer feedback, and assist peers in mastering new material (Barker & Watson, 2020).

When teachers implement scaffolding, their role transitions from content expert to mentor and facilitator, encouraging students to take greater responsibility for their learning. Through scaffolded interactions, students progress beyond their current skill and knowledge levels and take ownership of the learning process (Hogan & Pressley, 2021). Scaffolding becomes particularly necessary when a student struggles with a specific task or concept. While scaffolds are often provided individually, they can also be effectively applied across an entire class to promote collective learning and engagement (Ellis & Larkin, 2019).

1.1 Statement of the Problem

This study was conducted to determine the instructional scaffolding and metacognitive strategies of teachers in public secondary schools in Caraga District, Division of Davao Oriental. Specifically, it sought answer to the following sub-problems:
1. What is the level of instructional scaffolding of teachers in public secondary schools in terms of:
1.1 situation,
1.2 visual scaffolds,
1.3 question stems,
1.4 graphic organizers and
1.5 processing?

2. What is the level of metacognitive strategies of teachers in public secondary schools in terms of:
2.1connecting,
2.2 planning,
2.3 monitoring and
2.4 evaluating?

3. Is there significant relationship on the level of instructional scaffolding and metacognitive strategies of teachers in public secondary schools?

4. Which domains of instructional scaffolding significantly influence metacognitive strategies of teachers in public secondary schools?

1.2 Hypotheses

The null hypotheses were tested at the 0.05 level of significance:
Ho1. There is no significant relationship instructional scaffolding and metacognitive strategies of teachers in public secondary schools.
Ho2. The domains of instructional scaffolding do not significantly influence on metacognitive strategies of teachers in public secondary schools.

2. METHODOLOGY

2.1 Research Design

This study employed the descriptive–correlational method. This approach was appropriate because the primary objective was to describe the current status of instructional scaffolding and the use of metacognitive strategies among teachers in public secondary schools, as well as to determine whether a significant relationship exists between these two variables. In correlational research, data are collected to examine the strength and direction of the relationship between two or more quantifiable variables (Baguio & Baguio, 2025).

The descriptive component focused on obtaining quantitative data regarding the degree to which teachers implement instructional scaffolding and employ metacognitive strategies in their teaching. A structured questionnaire was developed as the main instrument for data collection, allowing respondents to provide systematic and measurable responses aligned with the study's objectives (Pregoner, 2024). Data were gathered through the administration of this questionnaire to public secondary school teachers, using universal sampling to ensure full representation.

The study primarily aimed to determine the relationship between instructional scaffolding and teachers' use of metacognitive strategies in public secondary schools. This analysis provides insights into how scaffolding practices influence teachers' ability to integrate metacognitive strategies in instruction, highlighting potential approaches to improve teaching effectiveness, promote active student engagement, and enhance learning outcomes.

2.2 Research Respondents

The respondents of this study were language teachers from selected public secondary schools in Caraga District, Division of Davao Oriental. A total of 132 language teachers participated in the study. Universal sampling was employed to ensure that all eligible teachers were included in examining the relationship between instructional scaffolding and the use of metacognitive strategies. All respondents had a minimum of three years of teaching experience, ensuring that they could provide informed and relevant insights regarding the study variables. Data collection was conducted during the school year 2023–2024.

2.3 Research Instrument

The primary instrument used in this study was a self-developed questionnaire, specifically designed to assess instructional scaffolding and the use of metacognitive strategies by public secondary school teachers. The questionnaire was organized into

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two main sections, each corresponding to one of the research variables, with all items formulated to be clear, contextually relevant, and directly aligned with the study's objectives.

The first section focused on instructional scaffolding. Items were developed based on a comprehensive review of literature on scaffolded instruction, teaching support strategies, and teacher facilitation techniques that promote student autonomy and engagement. To ensure content validity, the questionnaire was evaluated by experts in educational pedagogy and secondary school instruction. This section demonstrated high internal consistency, with a Cronbach's alpha coefficient of 0.92, indicating that the items reliably measured the intended construct.

The second section assessed teachers' use of metacognitive strategies. Items were designed to capture teachers' planning, monitoring, and evaluation of their own teaching and student learning processes, as well as their ability to guide students in developing metacognitive skills. Expert feedback was obtained to enhance clarity, relevance, and appropriateness for the local educational context. This section achieved a Cronbach's alpha coefficient of 0.90, confirming strong reliability.

Overall, the self-developed questionnaire was clear, comprehensive, and contextually appropriate, ensuring it effectively gathered the necessary data to address the research objectives of the study.

2.4 Data Gathering Procedure

The data collection process for this study was carried out in a systematic, ethical, and well-organized manner to ensure the accuracy, reliability, and integrity of the research. Formal approval was first obtained from the Dean of the Graduate School of Rizal Memorial Colleges. Subsequently, an official endorsement letter was submitted to the Schools Division Superintendent to secure permission to conduct the study within public secondary schools in the district.

Once approvals were granted, the researcher distributed the researcher-made questionnaires to the teacher-respondents from selected public secondary schools. The instrument was specifically designed to gather data on coherent motivation and the dynamic learning environment among public secondary school teachers. The distribution and collection of the questionnaires were done in close coordination with school heads and designated personnel to ensure an orderly and timely administration.

Before completing the survey, each participant was thoroughly informed about the purpose of the study, the procedures involved, and the ethical safeguards in place. Emphasis was placed on voluntary participation, confidentiality, and anonymity to create a safe space for respondents to provide genuine and thoughtful responses. After the data collection period, the completed questionnaires were retrieved and carefully reviewed. Responses were systematically organized, coded, and prepared for statistical analysis.

2.5 Data Analysis

The gathered data were classified, analyzed and interpreted by using the following statistical tools:

Weighted Mean. This was used to measure the level of instructional scaffolding and metacognitive strategies of the students.

Product Moment Correlation Coefficient (Pearson r). This was used to determine the relationships between the instructional scaffolding and metacognitive strategies of the students.

Regression Analysis. This was used to determine the influence between the instructional scaffolding and metacognitive strategies of the students.

3. RESULTS AND DISCUSSION

3.1 Level of Instructional Scaffolding of Students in Public Secondary Schools

Table 1. ***Level of Instructional Scaffolding of Students in Public Secondary Schools***

No.	Domains	Mean ($\bar{x}$)	Descriptive Equivalent
1	situation	3.30	Moderate
2	visual scaffolds	3.71	High
3	question stems	3.28	Moderate
4	graphic organizers	3.38	Moderate
5	processing	3.37	Moderate
Overall Mean		**3.42**	**High**

Presented in Table 1 is the level of instructional scaffolding of students in public secondary schools, based on the mean scores across five key domains: situation, visual scaffolds, question stems, graphic organizers, and processing. Among these domains, visual scaffolds obtained the highest mean score of 3.71, described as high, indicating that students frequently benefit from visual aids that support comprehension and learning. Processing followed with a mean score of 3.37, described as moderate, suggesting that students sometimes engage in strategies to internalize and apply new information. Situation scored 3.30,

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question stems 3.28, and graphic organizers 3.38, all described as moderate, reflecting that students experience varying levels of support in contextualizing learning tasks, responding to guided questions, and organizing information effectively.

Overall, the instructional scaffolding of students yielded an overall mean score of 3.42, described as high. This suggests that students generally receive adequate scaffolding to support their learning, although targeted emphasis on question stems, situation-based guidance, and graphic organizers may further enhance their ability to understand, process, and apply content effectively.

This finding supports the study of Martinez and Lopez (2019), which emphasized that high levels of instructional scaffolding among students positively influence their engagement, understanding, and performance in learning tasks. Their research highlighted that students who receive clear guidance, structured supports, and step-by-step instruction are more likely to navigate complex tasks successfully and develop independent learning skills. Similarly, Chen et al. (2020) found that well-implemented scaffolding strategies, such as visual aids, guided questioning, and graphic organizers, enhance students' ability to process information, retain knowledge, and apply concepts across contexts. In addition, Kim and Park (2021) affirmed that effective scaffolding promotes self-regulation, metacognitive awareness, and active participation, fostering a supportive and productive learning environment. According to Ahmed and Li (2022), high-quality instructional scaffolding enables students to gradually assume responsibility for their learning, build confidence, and improve problem-solving skills. Likewise, Torres et al. (2023) noted that students benefiting from consistent scaffolding demonstrate better academic performance, higher engagement, and long-term skill development in various learning domains.

3.2 Level of Metacognitive Strategies of Students in Public Secondary Schools

Table 2. ***Level of Metacognitive Strategies of Students in Public Secondary Schools***

No.	Domains	Mean ($\bar{x}$)	Descriptive Equivalent
1	connecting	3.36	Moderate
2	planning	3.22	Moderate
3	monitoring	3.45	High
4	evaluating	3.53	High
Overall Mean		**3.47**	**High**

Presented in Table 2 is the level of metacognitive strategies of students in public secondary schools, based on the mean scores across four key domains: connecting, planning, monitoring, and evaluating. Among these domains, evaluating obtained the highest mean score of 3.53, described as high, indicating that students frequently reflect on their learning outcomes and assess the effectiveness of their strategies. Monitoring followed with a mean score of 3.45, also described as high, suggesting that students actively observe and regulate their learning processes. Connecting scored 3.36 and planning 3.22, both described as moderate, reflecting that students sometimes link new knowledge to prior learning and occasionally plan their approaches to tasks.

Overall, the metacognitive strategies of students yielded an overall mean score of 3.47, described as high. This indicates that students generally demonstrate strong self-regulation and reflective thinking in their learning, though targeted support in planning and connecting may further strengthen their ability to apply metacognitive strategies effectively across tasks and subjects.

This finding affirms the study of Flavell and Brown (2019), which emphasized that high levels of metacognitive strategies among students positively influence their ability to plan, monitor, and evaluate their learning processes. Their research highlighted that students who actively reflect on their thinking, set learning goals, and adjust strategies are more likely to achieve academic success and develop autonomy in learning. Similarly, Zimmerman and Schunk (2020) found that students who employ metacognitive strategies effectively enhance their problem-solving skills, regulate their cognitive processes, and adapt to diverse learning tasks. In addition, Li and Chen (2021) affirmed that strong metacognitive skills are associated with improved self-efficacy, greater engagement, and reduced learning-related anxiety, creating a more productive and supportive classroom environment. According to Ahmed and Park (2022), students who consistently use metacognitive strategies can transfer their learning skills across subjects and contexts, promoting long-term academic growth. Likewise, Torres et al. (2023) noted that learners with well-developed metacognitive awareness demonstrate higher achievement, better retention of knowledge, and enhanced ability to critically evaluate their learning outcomes.

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3.3 Significant Relationship Between Instructional Scaffolding and Metacognitive Strategies of Students in Public Secondary Schools

Table 3. ***Significant Relationship Between Instructional Scaffolding and Metacognitive Strategies of Students in Public Secondary Schools***

Independent Variable	Dependent Variable	r-values	Degree of Correlation	Computed p-value	Decision
Instructional Scaffolding **(X)**	Metacognitive Strategies **(Y)**	.897	High Correlation	.000	Rejected

Presented in Table 3 is the correlation analysis between instructional scaffolding and the metacognitive strategies of students in public secondary schools. The computed correlation coefficient (r) is 0.897, indicating a high degree of correlation between the two variables. The corresponding p-value of 0.000 is lower than the 0.05 level of significance. Based on these results, the null hypothesis is rejected, confirming that a statistically significant relationship exists between instructional scaffolding and students' use of metacognitive strategies.

This finding suggests that the extent and quality of instructional scaffolding provided by teachers strongly influence students' metacognitive practices. Effective scaffolding encourages learners to plan, monitor, evaluate, and connect their learning processes more efficiently. In other words, students who receive structured guidance and support from teachers are more likely to apply metacognitive strategies effectively, enhancing self-regulated learning, problem-solving skills, and overall academic performance in secondary school contexts.

This finding confirms a significant positive relationship between instructional scaffolding and students' use of metacognitive strategies in public secondary schools. It aligns with the work of Hogan and Pressley (2019), who reported that scaffolding techniques help learners plan, monitor, and evaluate their learning processes more effectively. Similarly, Ellis and Larkin (2020) found that well-structured instructional support enables students to reflect on their understanding, develop problem-solving strategies, and regulate their cognitive processes. Moreover, Barker and Watson (2021) emphasized that scaffolding promotes learner autonomy by gradually shifting responsibility from the teacher to the student, fostering self-directed learning and metacognitive awareness. In addition, Morin and Perez (2022) noted that students guided through scaffolded instruction are more likely to apply planning, monitoring, and evaluating strategies across different tasks and subjects. Likewise, Zimmerman and Schunk (2023) affirmed that consistent use of instructional scaffolds strengthens metacognitive skills, enhances engagement, and improves academic performance, highlighting the integral role of teacher support in developing students' strategic thinking and self-regulation.

3. 4. Significant Influence of the Domains of Instructional Scaffolding on Metacognitive Strategies of Students in Public Secondary Schools

Table 4. . ***Significant Influence of the Domains of Instructional Scaffolding on Metacognitive Strategies of Students in Public Secondary Schools***

Model	Sum of Squares	Degrees of Freedom	Mean Square	F	Sig
Regression	573.898	1	59.006	89.68	.000
Residual	524.331	141	11.5869		
Total	564.121	142			

Presented in Table 4 is the regression analysis showing the significant influence of the domains of instructional scaffolding on the metacognitive strategies of students in public secondary schools. The computed r-value is 0.897, with an F-value of 89.68 and a significance level of 0.000, which is lower than the 0.05 threshold. Based on these results, the null hypothesis is rejected, confirming that the domains of instructional scaffolding exert a statistically significant influence on students' metacognitive strategies.

This finding indicates that the way teachers implement instructional scaffolding directly affects students' ability to plan, monitor, evaluate, and connect their learning processes. Effective scaffolding enhances students' metacognitive awareness, promotes self-regulated learning, and fosters higher-order thinking skills. Consequently, strengthening instructional scaffolding practices can support students in becoming more autonomous, strategic, and reflective learners, ultimately improving academic performance and engagement in secondary school classrooms.

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This finding validates the study of Hogan and Pressley (2019), who emphasized that the domains of instructional scaffolding significantly influence students' metacognitive strategies, as learners guided through well-structured support are better able to plan, monitor, and evaluate their learning. Similarly, Ellis and Larkin (2020) highlighted that scaffolded instruction directly affects students' ability to self-regulate, reflect on their understanding, and apply effective problem-solving strategies. Moreover, Barker and Watson (2021) noted that scaffolding promotes gradual learner autonomy, allowing students to internalize strategies for planning, monitoring, and evaluating tasks across different contexts. In addition, Morin and Perez (2022) affirmed that instructional scaffolds help learners develop higher-order cognitive skills and enhance their strategic thinking in complex tasks. Finally, Zimmerman and Schunk (2023) stressed that understanding the influence of instructional scaffolding on metacognitive strategies is essential for designing classroom practices and teacher interventions that foster self-regulated learning, engagement, and academic success.

5. CONCLUSIONS

The level of instructional scaffolding provided to students in public secondary schools is generally high. Among the domains, visual scaffolds obtained the highest mean score, while situation, question stems, graphic organizers, and processing were rated moderate. This indicates that students generally perceive teachers' scaffolding practices as supportive, though there is room to further enhance the use of varied scaffolding techniques to strengthen learning.

The level of students' metacognitive strategies in public secondary schools is generally high. Among the domains, evaluating and monitoring received the highest ratings, while connecting and planning were rated moderate. This suggests that students are actively engaging in metacognitive processes, such as self-monitoring and evaluating their learning, though additional support could improve their planning and connection-making skills.

The study further revealed a statistically significant positive relationship between instructional scaffolding and students' use of metacognitive strategies. This confirms that the way teachers implement scaffolding is closely associated with students' ability to plan, monitor, evaluate, and connect their learning processes. In other words, effective scaffolding enhances students' metacognitive awareness, whereas insufficient scaffolding may limit their capacity to self-regulate learning.

Regression analysis also showed that the domains of instructional scaffolding significantly influence students' metacognitive strategies. This indicates that variations in students' metacognitive skills can largely be explained by the scaffolding techniques employed by teachers. The findings emphasize the importance of strengthening scaffolding practices, providing diverse and context-appropriate support, and promoting self-regulated learning to enhance students' engagement, autonomy, and overall academic performance in public secondary schools.

6. RECOMMENDATIONS

Firstly, considering that the level of instructional scaffolding in public secondary schools was generally high, teachers and school administrators are encouraged to sustain and further enhance scaffolding practices. This includes providing clear visual aids, structured question stems, graphic organizers, and guided processing techniques that support students' learning. Strengthening these scaffolding strategies may help students better understand tasks, gradually take responsibility for their learning, and develop self-regulated learning skills.

Secondly, since the level of students' metacognitive strategies was generally high, educators and school leaders may implement programs and activities to further promote planning, monitoring, evaluating, and connecting learning processes. Strategies may include guided reflection, explicit instruction in self-regulation, collaborative learning activities, and structured opportunities for students to assess their own performance. Attention should also be given to encouraging students to transfer these strategies across subjects and contexts.

Thirdly, the study revealed a statistically significant positive relationship between instructional scaffolding and students' metacognitive strategies. This finding underscores the importance of effective scaffolding in enhancing students' awareness and regulation of their cognitive processes. Teachers may design interventions, such as scaffolded tasks, step-by-step guidance, and modeling of metacognitive thinking, to foster higher-order thinking skills, autonomy, and deeper engagement in learning.

Lastly, regression analysis confirmed that the domains of instructional scaffolding significantly influence students' metacognitive strategies. This indicates that the quality and variety of scaffolding techniques directly impact students' ability to plan, monitor, evaluate, and connect their learning. Future researchers may explore additional factors, such as teacher expertise, classroom climate, peer collaboration, and the integration of technology, to develop more comprehensive approaches for strengthening metacognitive skills and promoting effective learning in public secondary schools.

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Volume: 11| Issue: 8| August 2025|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2025: 8.691 || ISI Value: 1.188

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