

Achievement Goal–Driven Writing Strategy Instruction Model (AGDW-SIM): A Motivation-Integrated Innovation in Technical Writing Pedagogy

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Abstract

This study presents a pedagogical innovation in technical writing instruction through the development of the Achievement Goal–Driven Writing Strategy Instruction Model (AGDW-SIM), which integrates Achievement Goal Theory into stage-based writing strategy instruction. Using a quantitative correlational research design, the study examined the relationship between achievement goal orientations and writing strategy use among 121 third-year Bachelor of Food Processing and Technology students enrolled in a technical writing course. Data analysis revealed moderately high levels of achievement goal orientation ($M = 3.46$) and writing strategy use ($M = 3.53$). Pearson correlation analysis showed a strong and significant relationship between achievement goals and writing strategies ($r = 0.767$, $p < .001$). Among the goal orientations, performance-approach goals demonstrated the strongest association with writing strategies, followed by mastery goals, while performance-avoidance goals showed moderate but significant relationships. Based on these findings, the Achievement Goal–Driven Writing Strategy Instruction Model (AGDW-SIM) was developed as a learner-centered and motivation-responsive instructional framework that aligns students' motivational dispositions with explicit writing strategy instruction across pre-writing, during writing, and post-writing stages. The study contributes to the advancement of innovative and inclusive educational practices aligned with the United Nations Sustainable Development Goal 4 (Quality Education) by promoting effective, strategy-based, and motivation-responsive instruction that enhances students' engagement and performance in technical writing.

Keywords: Achievement Goal Orientation, Writing Strategies, Technical Writing, Instructional Innovation, Motivation, AGDW-SIM

1. Introduction

Writing is acknowledged as a complex cognitive, metacognitive, and social process that requires not only language competence but also strategic and motivational engagement (Graham & Harris, 2000; Hyland, 2003). In academic contexts, particularly in technical writing classrooms, students are expected to organize ideas systematically, apply discipline-specific conventions, and communicate information with clarity and precision. To accomplish these tasks, learners employ a range of writing strategies such as planning, drafting, revising, and self-monitoring (Flower & Hayes, 1981; Oxford, 2017). However, students' effective use of these strategies is not solely dependent on skill, but is also shaped by motivational factors that influence how they approach writing tasks.

One of the most influential frameworks explaining student motivation is Achievement Goal Theory, which posits that learners adopt different goal orientations that affect their learning behaviors and outcomes (Dweck, 1986; Elliot & McGregor, 2001). Students with mastery-oriented goals tend to focus on developing competence and are more likely to engage in deeper cognitive and metacognitive strategies, while those with performance-oriented goals may prioritize demonstrating ability or avoiding failure, often resulting in more surface-level engagement (Pintrich, 2000). Previous studies have shown that achievement goal orientation significantly influences students' academic performance and strategy use (Ames, 1992; Wolters, 2004). However, much of this research has been conducted in general academic or ESL/EFL writing contexts, with limited attention given to technical writing as a specialized domain.

This study was primarily anchored on the Achievement Goal Theory Trichotomous Model (Elliot, 1999), which explains that the type of goals that students adopt influence their learning behavior. Within the trichotomous model, three types of goals are identified: mastery goals, which highlight intrinsic motivation to improve self-competence and skills; performance-approach goals, which rely on extrinsic motivation, usually driven by grades, recognition, or comparison with others; and performance-avoidance goals, which involve avoiding failure or appearing incompetent. The goals adopted by the students may determine the intensity of their writing strategies; hence, this theory is deeply relevant to this context.

Despite the increasing importance of technical writing in higher education, particularly in preparing students for professional and industry-related communication, there remains a gap in understanding how motivational orientations shape students' use of writing strategies in this context. Few studies have examined the intersection of achievement goal orientation and strategy use in technical writing classrooms, especially within the Philippine higher education setting. This gap highlights the need for an innovation that integrates motivation and strategy instruction into a unified pedagogical model. Addressing this gap, the present study investigates the relationship between students' achievement goal orientation and their use of writing strategies in a technical writing class. Specifically, this study introduces the Achievement Goal-Driven Writing Strategy Instruction Model (AGDW-SIM), which reframes technical writing instruction as a motivation-responsive, stage-based learning process. The model aligns students' goal orientations with targeted writing strategy instruction to enhance engagement and performance.

2. Material and methods

2.1 Research Design

This study employed a quantitative design, specifically the non-experimental correlational approach, to investigate the relationship between achievement goals and writing strategies of technical writing students. In this study, standardized instruments were utilized to evaluate the variables, facilitating the quantification of data and its subsequent application of suitable statistical analyses. This is the most suitable design as it allows researchers to test the strength and direct relationship among the variables without manipulating them.

2.2 Locale of the Study

The study was conducted at a state university in Oroquieta City, Misamis Occidental. The institution served as the primary setting for examining the technical writing baseline of higher education students within the local academic context.

2.3 Respondents of the Study

The respondents of the study were third-year Bachelor of Food Processing and Technology students enrolled in a technical writing course during the first semester of Academic Year 2025–2026.

2.4 Sample and Sampling Procedure

The study evaluated a final headcount of 121 students. It employed total population sampling, wherein all students enrolled in the specified technical writing class sections were included as participants.

2.5 Research Instrument

Two standardized questionnaires were used in this study, which were administered through Google Forms. The first tool was the Writing Achievement Goals Scale, used by Soylu et al. (2017) as cited in Zhang (2023), which measures the underlying motivation of students when they write essays. This self-report tool uses a 5-point Likert scale, with 1 meaning "does not describe me" and 5 meaning "describes me perfectly". The second was the Writing Strategy Questionnaire by Petric and Czarl (2003) to assess students' use of writing strategies across the three stages of writing: pre-writing, during writing, and post-writing. To ensure internal consistency, these instruments were further examined through the computation of Cronbach's alpha coefficients and Composite Reliability.

2.6 Data Gathering Procedure

Data were collected through surveys administered to the participants via Google Forms. Prior to the administration of the instruments, the study's exact parameters and aims were introduced and explained systematically to the classes, after which formal informed consents were secured securely from the individuals.

2.7 Data Analysis Techniques

To identify the prevalent goal orientations and frequently utilized writing strategies of the participants, descriptive statistics were utilized. Pearson Correlation (r) was used to establish the direction and strength of relationships between the key variables through the use of the Jamovi program. In order to confirm the internal consistency of the instruments used, the structural scales were evaluated using Cronbach's Alpha metrics.

2.8 Ethical Considerations

This study adhered to all ethical standards for research involving human participants. Prior to data collection, official institutional approval was secured from a state university in Oroquieta City, Misamis Occidental. The researchers strictly complied with data privacy and confidentiality protocols to protect the identities of the participants, ensuring that all responses were treated anonymously and kept confidential throughout the study.

3. Results and Discussion

3.1. Levels of Achievement Goal Orientation and Writing Strategy Use

Table 1 summarizes the descriptive statistics of the key variables of the study. The findings show that students have a moderately high level of achievement goals with a mean of 3.46 and standard deviation of 0.628. This indicates that many learners set clear academic goals and are motivated to perform well in their technical-writing tasks. The moderate standard deviation suggests that although students differ in how strongly they pursue their goals, most responses were close to the average.

Writing strategies were also moderately high level with a mean of 3.53, suggesting that students regularly used the strategies often linked to effective writing (Chen, 2022). On the other hand, result shows a moderate spread of responses, with a standard deviation of 0.652. This implies that while many students use these strategies regularly, others seem to use them occasionally.

These findings indicate that students in the technical writing class generally demonstrate a positive motivational disposition and are actively engaged in strategic writing practices across the stages. The moderately high levels suggest that students are not only aware of the importance of writing strategies but are also capable of applying them in academic tasks. This supports the view that writing is not merely a linguistic activity but a strategic and goal-directed process, where motivation plays a facilitating role in sustaining engagement (Graham & Harris, 2000; Hyland, 2003).

Table 1. *Level of Achievement Goal and Writing Strategies*

Variables	N	Mean	SD	Description
Achievement Goal	121	3.46	0.628	Moderately High
Writing Strategies	121	3.53	0.652	Moderately High

3.2. Relationship between Achievement Goal and Writing Strategies

As shown in Table 2, there is a strong positive and statistically significant relationship between overall achievement goal orientation and writing strategy use ($r = 0.767$, $p < .001$). This indicates that students with higher levels of goal orientation tend to employ writing strategies more frequently and effectively. The strength of this relationship suggests that motivation is a critical determinant of strategic behavior in technical writing. The strength of the correlation indicates a high degree of association, implying that goal orientation may play an important role in influencing students' strategic approaches to writing.

Table 2. *Correlation between Achievement Goal and Writing Strategies*

Variables	Pearson's r	p-value	Description
Achievement Goal vs Writing Strategies	0.767	<.001	Strong positive, statistically significant

3.3. Detailed Relationship across Goal Types and Writing Strategy Stages

The correlation matrix provides a more nuanced understanding of how specific types of achievement goals relate to writing strategies across different stages of the writing process.

Table 3 presents the correlation between mastery goal orientation and writing strategies across different stages of the writing process. The results reveal moderate to strong positive and statistically significant relationships between mastery goals and all writing strategy stages. Specifically, mastery goals show a moderate correlation with before-writing ($r = 0.505$), post-writing ($r = 0.528$), and overall writing strategies ($r = 0.594$), while a strong correlation is observed during the writing stage ($r = 0.614$). These findings indicate that mastery-oriented students are consistently engaged across all phases of the writing process, with slightly stronger involvement during the drafting stage. This suggests that such students are particularly focused on developing and organizing their ideas while writing. The results support theoretical assertions that mastery goals foster deep cognitive and metacognitive engagement, including planning, monitoring, and revising behaviors (Dweck, 1986).

Table 3. *Correlation between Mastery Goal Orientation and Writing Strategies across different stages*

Variables	Pearson's r	p-value	Description
Mastery Goals vs. Before Writing Strategy	0.505	<.001	Moderate positive, statistically significant
Mastery Goals vs. During Writing Strategy	0.614	<.001	Strong positive, statistically significant
Mastery Goals vs. Post Writing Strategy	0.528	<.001	Moderate positive, statistically significant
Mastery Goals vs. Overall Writing Strategy	0.594	<.001	Moderate positive, statistically significant

Table 4 presents the correlation between performance-approach goal orientation and writing strategies across the stages of the writing process. The findings reveal strong positive and statistically significant correlations for all stages: before writing ($r = 0.661$), during writing ($r = 0.629$), post-writing ($r = 0.614$), and overall writing strategy use ($r = 0.691$). These results indicate that students motivated by demonstrating competence and achieving favorable outcomes consistently engage in strategic behaviors throughout the writing process.

Compared to mastery-oriented students, performance-approach students in this sample exhibit the strongest engagement across all writing stages, suggesting that the structure and assessment-driven nature of the technical writing course may encourage outcome-focused learners to adopt effective strategies to ensure successful and visible results. Their consistent strategy use across the stages reflects a balance between efficiency and effectiveness, aligning with research that performance-approach goals foster goal-directed effort and adaptive strategic behaviors (Elliot & McGregor, 2001).

Overall, these findings underscore the role of achievement goal orientation in shaping strategic writing behaviors, particularly in contexts where performance outcomes are emphasized, and highlight the potential of leveraging performance-approach motivation to enhance writing strategy adoption.

Table 4. *Correlation between Performance-Approach Goal Orientation and Writing Strategies across different stages*

Variables	Pearson's r	p-value	Description
Performance-Approach Goal Orientation vs. Before Writing Strategy	0.661	<.001	Strong positive, statistically significant
Performance-Approach Goal Orientation vs. During Writing Strategy	0.629	<.001	Strong positive, statistically significant
Performance-Approach Goal Orientation vs. Post Writing Strategy	0.614	<.001	Strong positive, statistically significant
Performance-Approach Goal Orientation vs. Overall Writing Strategy	0.691	<.001	Strong positive, statistically significant

Table 5 presents the correlation between performance-avoidance goal orientation and writing strategies across different stages of the writing process. The results reveal moderate positive and statistically significant correlations across all stages: before writing ($r = 0.417$), during writing ($r = 0.481$), post-writing ($r = 0.491$), and overall writing strategy use ($r = 0.499$).

Although these correlations are weaker than those observed for mastery and performance-approach goals, they indicate that students motivated by fear of failure or avoidance of negative evaluation still engage in strategic behaviors, albeit at a more cautious or surface level. Their engagement may be particularly focused on editing, error correction, and minimizing mistakes, reflecting a defensive approach to the writing process.

These findings are consistent with prior research suggesting that performance-avoidance goals are associated with defensive or minimal engagement rather than deep cognitive or metacognitive involvement (Pintrich, 2000). Despite the lower intensity of engagement, performance-avoidance students still utilize strategies across all stages, highlighting that avoidance-oriented motivation can prompt students to act strategically, though primarily to prevent failure rather than achieve mastery or excellence.

Overall, the results demonstrate a graded pattern of engagement across achievement goal orientations, with performance-approach goals showing the strongest influence on writing strategies, mastery goals exhibiting moderate to strong engagement, and performance-avoidance goals showing moderate but cautious strategy use.

Table 5. Correlation between Performance-Avoidance Goal Orientation and Writing Strategies across different stages

Variables	Pearson's r	p-value	Description
Performance-Avoidance Goal Orientation vs. Before Writing Strategy	0.417	<.001	Moderate positive, statistically significant
Performance-Avoidance Goal Orientation vs. During Writing Strategy	0.481	<.001	Moderate positive, statistically significant
Performance-Avoidance Goal Orientation vs. Post Writing Strategy	0.491	<.001	Moderate positive, statistically significant
Performance-Avoidance Goal Orientation vs. Overall Writing Strategy	0.499	<.001	Moderate positive, statistically significant

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Taken together, the findings strong correlations across all variables highlight that motivation and strategy use are deeply intertwined, reinforcing the idea that effective writing instruction must address both cognitive and motivational dimensions. The findings support Achievement Goal Theory, confirming that motivation significantly shapes writing strategy use. Performance-approach goals emerged as the strongest predictor, suggesting that in technical writing contexts, outcome-oriented motivation can enhance strategic engagement. Mastery goals promote deeper learning, while avoidance goals lead to limited but still functional engagement.

3.4. Instructional Innovation Interpretation

The findings reveal a clear motivational-strategic alignment in students' writing behavior, providing a strong empirical basis for instructional innovation. The differentiated influence of mastery, performance-approach, and performance-avoidance goals suggests that writing strategies are not uniformly applied but are shaped by learners' underlying motivations. This indicates that traditional one-size-fits-all writing instruction may be insufficient. Instead, a motivation-responsive approach is necessary, where instructional design intentionally aligns strategy instruction with students' goal orientations. By doing so, teaching can better support deep engagement for mastery-oriented learners, optimize structured performance for outcome-driven students, and provide scaffolding for those with avoidance tendencies. This interpretation reframes motivation as a critical pedagogical variable rather than a background factor.

3.5. The AGDW-SIM Model

In response to these findings, the study proposes the Achievement Goal-Driven Writing Strategy Instruction Model (AGDW-SIM) as a pedagogical framework for technical writing instruction. The model integrates achievement goal orientation as the input, stage-based writing strategies as the core process, and motivation-responsive teaching practices as the instructional mechanism. It emphasizes aligning pre-writing, during-writing, and post-writing strategies with students' motivational profiles through goal-setting, scaffolding, feedback, and affective support. The intended outcome is enhanced strategic writing behavior, improved engagement, and higher-quality technical writing outputs. As an innovation, AGDW-SIM operationalizes the interaction between motivation and strategy use into a structured, classroom-applicable model that supports differentiated and learner-centered instruction.

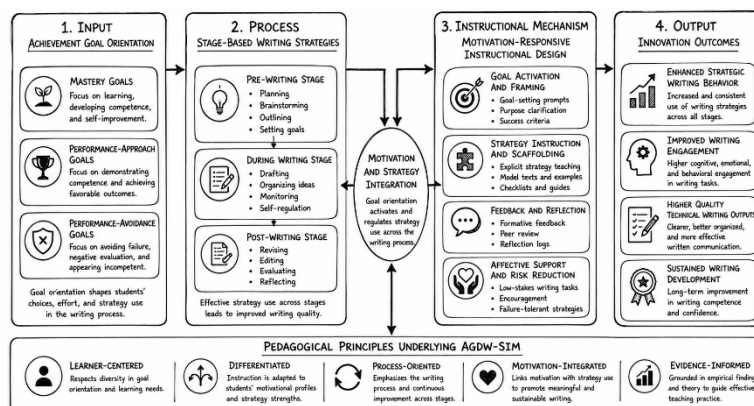


Figure 1. *Achievement Goal–Driven Writing Strategy Instruction Model (AGDW-SIM)*

4. Conclusion & Recommendations

This study confirms that achievement goal orientation significantly influences students' use of writing strategies in technical writing. The strong positive relationship between variables indicates that motivation plays a central role in shaping how learners plan, draft, and revise their work. Performance-approach goals showed the strongest association with writing strategies, while mastery goals supported deeper cognitive processing and performance-avoidance goals were linked to moderate, cautious strategy use. These findings informed the development of the Achievement Goal–Driven Writing Strategy Instruction Model (AGDW-SIM), which balances motivational alignment with stage-based instruction.

It is recommended that instructors incorporate goal-oriented and strategy-based instruction across all writing stages while fostering supportive learning environments that address diverse motivational profiles. Curriculum designers should embed motivation-strategy integration in instructional planning and assessment frameworks. Future research may validate the model through experimental or longitudinal designs and explore its applicability across other academic disciplines and motivational constructs.

A limitation of this study centers on its reliance on self-reported survey questionnaires, which capture students' perceived strategy use and motivational mindsets rather than direct behavioral observations in real-time writing tasks. Additionally, the participant pool was restricted to a single cohort of 121 third-year Bachelor of Food Processing and Technology students within one institutional campus locale. Consequently, the findings and structural paths of the AGDW-SIM framework may vary when applied to diverse demographic tracks or alternative institutional contexts.

Compliance with ethical standards

This study was conducted in strict adherence to institutional ethical standards for research involving human participants, with formal administrative approval secured from a state university in Oroquieta City, Misamis Occidental. Participation was entirely voluntary, and informed consent was obtained from all respondents prior to data collection. To ensure data privacy and anonymity, all personally identifying information was omitted and treated with strict confidentiality throughout the structural analysis. The authors declare that they have no known competing financial interests, institutional biases, or personal relationships that may have influenced the work reported in this article. Guided by the principles of respect, beneficence, and justice, the researchers responsibly acknowledged the contributions of participating students and supporting colleagues while maintaining authorship integrity and compliance with ethical and copyright standards.

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