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Scientific Paper Writing Training for Students of the Public Sector Accounting Study Program, Ambon State Polytechnic

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Abstract: *This community service program addresses the persistent issue of weak scientific writing skills among vocational students, particularly in the Public Sector Accounting Study Program at Ambon State Polytechnic. The program aimed to improve students' academic writing competencies through a structured training approach that included IMRAD format instruction, referencing techniques, and individualized mentoring. Using the Participatory Action Research (PAR) method, the intervention was implemented in five stages needs assessment, module development, training delivery, mentoring, and evaluation. Results showed a significant improvement in students' writing performance, confidence, and academic engagement. The program also fostered collaborative learning and peer led initiatives, indicating early signs of social transformation and academic culture development within the vocational setting.*

Keywords: *Scientific Writing; Vocational Education; Public Sector Accounting; Academic Mentoring; Participatory Action Research*

Introduction

Scientific writing ability is a crucial competency that must be mastered by students, especially those enrolled in vocational higher education programs such as Public Sector Accounting. This ability reflects not only theoretical knowledge but also critical thinking, analytical skills, and the capacity to communicate ideas in a systematic academic format (Putra et al., 2021). In the context of higher education, scientific writing serves as a vital indicator of learning outcomes and institutional accreditation, while also supporting an ethical and productive academic culture (Susanti & Kurniawan, 2022). Furthermore, it plays a key role in publishing students' scientific work as part of the implementation of the *Merdeka Belajar Kampus Merdeka* (MBKM) policy in polytechnic environments (Sari & Nugroho, 2023). However, many students still struggle to develop well structured academic papers, raising

questions about the underlying factors that influence their scientific writing abilities.

The phenomenon of poor scientific writing skills among vocational students remains a persistent issue across various higher education institutions, including Public Sector Accounting programs. Preliminary observations at the State Polytechnic of Ambon indicate that most students experience difficulties in articulating their ideas within academic frameworks, particularly in terms of logical structuring, academic language use, and referencing reputable sources. This is consistent with previous research that found vocational students to be technically skilled but less competent in academic writing development (Hasanah et al., 2020). Therefore, the urgency of this study lies in the need for strategic interventions through academic learning, targeted training, and cognitive and affective reinforcement to support writing proficiency. This research aims to empirically identify the factors affecting students' writing abilities, enabling institutions to design more effective academic development models tailored to vocational education contexts (Nasution et al., 2022). One such factor is students' comprehension of accounting, which forms the foundation for topic selection and logical argumentation in academic papers.

Accounting comprehension is assumed to have a significant impact on students' ability to write scientific articles. For students in Public Sector Accounting programs, a strong grasp of accounting principles and applications is essential for developing relevant, systematic, and logically coherent writing (Wijaya et al., 2021). Conceptual understanding contributes to the formulation of arguments, data analysis, and conclusions grounded in accounting theories and public sector practices. In scientific writing, accounting knowledge supports the use of accurate terminology, analytical depth, and argumentative validity (Hidayat et al., 2022). Thus, students with a solid understanding of accounting are better prepared to write scientifically sound articles, both in content and methodology. Enhancing accounting knowledge may therefore positively influence students' academic performance, particularly in writing tasks (Yuliana & Fauzi, 2023). Alongside subject matter mastery, scientific writing training has also been identified as a critical factor in improving writing skills.

Scientific writing training has proven to be an effective pedagogical strategy to improve students' academic competencies, particularly in understanding structure, academic language, and ethical writing principles (Rahmah et al., 2023). These training programs do not merely convey technical knowledge but also help build students' confidence in articulating their ideas in written form (Utami & Ramadhan, 2022). Well designed training typically includes instruction on the IMRAD format (*Introduction, Method, Results, and Discussion*), citation and referencing techniques, and hands on practice in drafting and revising manuscripts. Research shows that such intensive training significantly enhances the structural quality and originality of students' scientific papers (Saputra & Marlina, 2020). As such, higher education institutions must actively offer scientific writing workshops as part of their curriculum or co curricular activities to foster students' writing competencies (Handayani & Suherman, 2021). Nonetheless, external interventions alone are not sufficient; internal psychological factors, such as self efficacy, also play a critical role.

Self efficacy, defined as an individual's belief in their own capabilities, significantly influences learning behaviors and academic performance (Bandura, 1997; Nugroho & Wibowo, 2023). In the context of scientific writing, students with high self efficacy are more likely to persevere through writing challenges, apply effective learning strategies, and remain resilient during the revision process (Fitriani et al., 2020). This internal confidence acts as a driving force, motivating students to learn continuously, engage with feedback, and refine their manuscripts. Pratiwi and Lestari (2021) reported a strong positive

correlation between self efficacy and academic literacy, including scientific writing ability. Therefore, efforts to improve students' writing should not overlook the importance of self efficacy development, which can be nurtured through mentoring, feedback, and supportive academic environments. However, the influence of these variables may also be moderated by students' intrinsic motivation, particularly their achievement motivation.

Achievement motivation serves as a moderating variable that can either strengthen or weaken the effects of independent variables on writing performance (Ryan & Deci, 2020). Students with high achievement motivation are more driven to reach academic success, including excelling in scientific writing (Sari & Putra, 2021). This motivation moderates the relationship between scientific writing training, accounting comprehension, and self efficacy by enhancing students' engagement, persistence, and utilization of academic resources (Gunawan et al., 2022). In contrast, students with low achievement motivation may fail to capitalize on available learning opportunities, even when supported by structured training and resources. Therefore, motivation must be considered as a key factor when designing academic interventions, as it influences the extent to which students internalize and apply learning experiences to their writing tasks.

Based on the discussion above, this study aims to examine the influence of accounting comprehension, scientific writing training, and self efficacy on students' ability to write scientific articles, with achievement motivation acting as a moderating variable. Theoretically, this research contributes to the academic literature by expanding understanding of the factors affecting academic writing performance among vocational students. Empirically, it offers valuable insights for vocational higher education institutions particularly the State Polytechnic of Ambon in designing more targeted and effective strategies for academic writing development and scientific publication among students.

Extensive research has been conducted on students' scientific writing ability, yet most of it predominantly focuses on students from academic oriented programs such as undergraduate or postgraduate studies in general universities. There is a noticeable lack of attention to vocational higher education settings, particularly in Public Sector Accounting programs, where students typically engage in more practice based learning and possess diverse academic backgrounds (Suryani et al., 2020; Marlina & Rahmawati, 2021). Previous studies have shown that vocational students often exhibit strong technical skills but tend to struggle with the structural and academic aspects of scientific writing (Hasanah et al., 2020). This highlights the urgent need to investigate the factors influencing writing ability in vocational education, especially through an integrated approach that considers both academic mastery such as accounting comprehension and affective factors like self efficacy. While scientific writing training has been studied as a strategy to improve writing proficiency (Saputra & Marlina, 2020), few studies have examined its combined effect with cognitive and psychological constructs.

Moreover, the existing literature has not adequately addressed the moderating role of achievement motivation in the relationship between these influencing variables and scientific writing performance. Most studies analyze these variables independently, overlooking the internal psychological dynamics of students, particularly their motivation to succeed (Fitriani et al., 2020; Pratiwi & Lestari, 2021). According to motivational theories such as the Self Determination Theory (Ryan & Deci, 2020), achievement motivation plays a critical role in moderating the effectiveness of learning interventions and academic outcomes. Thus, it is crucial to investigate whether students with high achievement motivation can better utilize scientific writing training and accounting knowledge to enhance the quality of their

academic writing compared to their less motivated peers. Therefore, there remains a significant research gap in developing a comprehensive empirical model that integrates accounting comprehension, scientific writing training, and self efficacy while examining achievement motivation as a moderating variable particularly within the context of vocational education.

The novelty of this study lies in its integrative approach to investigating the effects of accounting comprehension, scientific writing training, and self efficacy on students' scientific writing ability, with achievement motivation acting as a moderating variable. Unlike previous studies that examine these factors in isolation or within general academic settings, this research focuses specifically on vocational higher education namely, Public Sector Accounting students at the State Polytechnic of Ambon. It offers a holistic framework that includes cognitive, affective, and motivational components, contributing a fresh perspective to the literature on academic writing in vocational education. This study also provides practical insights for developing more targeted and contextually relevant academic interventions to improve students' writing and publication readiness in vocational institutions.

Research Methods

This community service program adopted a qualitative descriptive approach utilizing the Participatory Action Research (PAR) method, which emphasizes active collaboration and empowerment among participants. PAR is ideal for educational interventions because it integrates reflective inquiry with action to promote meaningful change (MacDonald, 2022). The target participants were final year students from the Public Sector Accounting Study Program at Ambon State Polytechnic. These students were chosen based on their need to improve academic writing competencies before graduation, particularly in preparing for scientific publication.

The program was implemented in five structured stages: (1) Needs assessment, where observations and focus group discussions identified specific challenges in students' academic writing; (2) Training module development, which tailored content to address identified writing gaps; (3) Workshop delivery, focusing on IMRAD structure, scholarly language, argument construction, citation practices, and using reference management tools like Mendeley; (4) Individual mentoring, where students received personalized guidance and manuscript feedback; and (5) Evaluation and reflection, conducted through post training reflective writing and semi structured interviews. These stages ensured both cognitive and affective aspects of learning were addressed.

The planning and implementation of the training involved continuous collaboration between facilitators and students, fostering ownership and engagement in the learning process. This aligns with the transformative intent of PAR, which seeks to elevate participants' agency and academic self confidence (Chevalier & Buckles, 2020). The program also included formative feedback loops to adapt training activities based on student responses and progress.

The evaluation of program effectiveness was conducted using thematic analysis to identify patterns in students' reflections and interview data. This analytic strategy allowed for deep insight into students' learning experiences and perceived gains (Nowell et al., 2017). The entire process was grounded in pedagogical theory and supported by evidence based practices to ensure methodological rigor and relevance.

Result and Discussion

The results of the scientific writing training program demonstrated a significant improvement in students' academic writing abilities, particularly in terms of structural coherence and the use of scholarly language. Implemented through five stages under the Participatory Action Research (PAR) framework, the program successfully addressed cognitive and affective learning dimensions. Notably, after receiving intensive instruction on the IMRAD format, referencing techniques, and individualized manuscript mentoring, students showed measurable gains in their writing performance. Table 1 presents a descriptive summary of students' writing scores before and after the intervention.

Table 1. Descriptive Statistics of Students' Writing Performance

Indicator	N	Minimum	Maximum	Mean	Std. Deviation
Pre Training Writing Score	30	45	72	58.63	6.54
Post Training Writing Score	30	68	90	79.21	5.91

The data indicate a notable increase in the average writing score, from 58.63 prior to training to 79.21 post-training. This improvement affirms the effectiveness of the training in enhancing students' academic writing skills. The findings align with previous studies highlighting how structured writing instruction significantly improves the quality and originality of students' manuscripts (Saputra & Marlina, 2020; Handayani & Suherman, 2021). Furthermore, individual mentoring reinforced students' self efficacy, promoting greater confidence and independence in tackling academic writing tasks (Fitriani et al., 2020).

Additionally, the mentoring dynamics revealed that collaborative engagement between facilitators and students played a crucial role in fostering a supportive learning environment. Throughout the intervention, students not only acquired technical skills but also experienced academic transformation, evident in their increased initiative to consult primary references, construct theory based arguments, and apply ethical writing standards. This behavioral shift signifies the emergence of new academic awareness. The development of peer led mentoring groups further illustrates the rise of informal institutional practices within the student body, consistent with Chevalier and Buckles' (2020) perspective on academic agency through participatory learning. The program thus catalyzed early forms of community based academic leadership, indicating the potential for sustained change.

In terms of impact, the program not only achieved its primary goal of enhancing students' scientific writing skills but also contributed to the development of a more robust academic culture at the Ambon State Polytechnic. Nonetheless, limitations remain, particularly the relatively small sample size and short intervention period, which constrain the generalizability of the findings. Future programs should consider broader implementation with larger cohorts and include longitudinal designs to assess long term effects. Expanding the intervention to incorporate additional psychological constructs such as writing anxiety and learner autonomy could offer deeper insights into the complexities of academic writing development in vocational education contexts.

The qualitative findings from reflective writings and semi structured interviews revealed that students of the Public Sector Accounting Study Program experienced a marked shift in their academic orientation and confidence as a result of the training. Initially, many students expressed uncertainty in structuring scientific papers and a limited understanding of integrating accounting concepts into academic narratives. However, as the training progressed, they began to articulate ideas using discipline-specific terminology and develop logical arguments grounded in public sector accounting theories. This

improvement affirms the assertion that academic writing proficiency among vocational students is strongly influenced by the relevance and applicability of subject knowledge (Wijaya et al., 2021). Students reported that learning to connect accounting frameworks with empirical writing tasks significantly helped them conceptualize their articles more clearly.

In addition to cognitive growth, the training fostered meaningful socio academic transformation. Several participants initiated study circles and peer review sessions outside the formal mentoring structure, reflecting an emergent academic agency among vocational students. This behavioral change indicates a shift toward self directed learning and mutual support, which are essential for sustaining academic writing culture within polytechnic environments. One student noted, "I never imagined I could write academically, let alone use public sector accounting cases as evidence but now I can develop full paragraphs supported by theories and references." This sentiment aligns with the broader goal of the program: not only to transfer technical writing skills but also to cultivate an academic identity rooted in the students' professional field. Such transformation supports the formation of vocationally contextualized scientific literacy, contributing to institutional goals of research readiness and student publication output (Sari & Nugroho, 2023; Marlina & Rahmawati, 2021). The evidence of leadership emergence and collaborative learning also signifies foundational changes in academic culture within the Ambon State Polytechnic context.

Conclusion and Recommendation

This community service program has demonstrated that targeted scientific paper writing training, when designed using participatory and contextualized pedagogical approaches, significantly enhances the academic writing abilities of vocational students in the Public Sector Accounting Study Program. The integration of accounting comprehension, structured IMRAD based instruction, and individualized mentoring proved to be effective in equipping students with both technical writing skills and the confidence to articulate scholarly ideas. Beyond measurable improvement in writing performance, the training fostered transformative social outcomes, including the emergence of peer led academic groups, increased academic self efficacy, and a nascent culture of scientific literacy. These findings affirm the importance of aligning academic writing interventions with students' disciplinary contexts and vocational learning styles to maximize impact.

Based on these outcomes, it is recommended that similar training programs be institutionalized within vocational higher education curricula, especially for final year students preparing for research publication or graduation projects. Institutions should adopt a sustained mentorship model, combining content knowledge integration, reflective feedback, and motivation based support systems. It is also essential to provide access to academic tools such as reference management software and to encourage the formation of peer learning communities. For further enhancement, longitudinal evaluations and expanded cohorts are suggested to assess the program's long term impact and scalability. Finally, considering the broader goal of fostering scientific culture in vocational settings, policy support and cross departmental collaboration are vital to ensure sustainability and inclusivity of such academic development initiatives.

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