



Holistic Assessment in TVET: Enhancing Writing Evaluation Through a Pilot Study

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Abstract

This study examines the implementation of a holistic assessment framework to enhance English writing proficiency among Technical and Vocational Education and Training (TVET) students in Aceh, Indonesia. Traditional assessment methods in TVET often prioritize technical skills over written communication, leaving graduates ill-prepared for workplace demands. This pilot study employed a mixed-methods approach, analyzing pre- and post-intervention writing samples from two polytechnics using a standardized rubric focused on content, structure, language accuracy, clarity, and task fulfillment. Results revealed significant improvements, with average scores rising from 53.7% to 77.5%—a 23.8-point increase. Pass rates surged from 6% to 100%, and failing grades were eliminated entirely. Component-wise analysis showed notable gains: content (43.3% increase), structure (43.9%), and purpose articulation (52.6%). Qualitative feedback highlighted heightened student engagement and instructor satisfaction with the framework's nuanced evaluation. The study underscores holistic assessment as a transformative tool for bridging the gap between vocational training and professional communication needs, advocating for its adoption across TVET institutions to foster workforce-ready graduates. Challenges include resource allocation and instructor training, but the consistent outcomes across institutions suggest scalability. Future research should explore long-

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term impacts on career success and adaptability to diverse vocational contexts.

1. INTRODUCTION

Technical and Vocational Education and Training (TVET) institutions serve as crucial bridges between academic learning and professional practice, preparing students for direct entry into the workforce with specialized skills and competencies (Johnson, 2008). However, the emphasis on technical proficiency in TVET programs often overshadows the development of essential communication skills, particularly written English proficiency, which has become increasingly vital in today's globalized work environment. TVET institutions serve a heterogeneous student population, characterized by varied academic preparations, socioeconomic backgrounds, and cultural identities, all united by the common goal of acquiring vocational expertise that enhances their prospects in the labor market (Nkalane, 2018). The efficacy of TVET programs is inextricably linked to the precision and comprehensiveness of their assessment techniques, particularly in evaluating written communication skills, a cornerstone of professional success across diverse vocational domains (Harun et al., 2020). Traditional assessment methods in TVET often rely on standardized tests and examinations that emphasize rote memorization and the reproduction of factual knowledge, overlooking the nuanced application of skills and the development of critical thinking abilities (Yahiaoui, 2020).

The challenge of inadequate English writing skills among TVET students represents a significant gap in their professional preparation. Unlike traditional academic institutions where essay writing and extensive written assignments are commonplace, TVET students have limited opportunities to engage in sustained English writing activities. This includes critical professional communication tasks such as technical report writing, self-evaluation documentation, and comprehensive paragraph construction—all essential skills required in modern technical workplaces. The ability to articulate technical concepts clearly, document project processes accurately, and communicate effectively with colleagues and clients is paramount for TVET graduates entering the workforce, which necessitates a paradigm shift in the way writing is taught and evaluated in these institutions. Evidence from two polytechnics in Aceh reveals a concerning pattern of deficient writing abilities among TVET students. Students demonstrate significant difficulties in constructing coherent paragraphs, organizing their thoughts effectively, and expressing technical concepts clearly in written English format. This deficiency not only impacts their academic performance but also potentially limits their career advancement opportunities in an increasingly competitive job market where English proficiency is often a prerequisite for professional growth.

The traditional assessment methods employed in TVET settings frequently fail to address these writing deficiencies comprehensively. Conventional evaluation approaches tend to focus on isolated language components rather than assessing students' ability to produce coherent, purposeful written communication. This



fragmented assessment approach provides an incomplete picture of students' actual writing competencies and fails to guide targeted instructional interventions.

This research introduces a holistic assessment framework specifically designed to evaluate and enhance English writing skills within the TVET context. By implementing a comprehensive pilot study across multiple dimensions of writing competency—including content organization, language accuracy, coherence, and task fulfillment—this investigation aims to provide a more nuanced understanding of students' writing abilities and establish effective pathways for improvement.

The significance of this study extends beyond mere academic evaluation. As TVET graduates increasingly enter international work environments and engage with global supply chains, their ability to communicate effectively in written English becomes a critical determinant of professional success. Furthermore, the development of robust writing assessment tools specifically tailored for TVET contexts can inform curriculum development, instructional strategies, and quality assurance measures across technical education institutions.

Through this pilot study, we seek to establish evidence-based practices for holistic writing assessment that can be replicated and scaled across TVET institutions, ultimately contributing to the enhancement of graduates' professional communication competencies and their readiness for the demands of contemporary technical careers. Holistic assessment represents a paradigm shift in educational evaluation, moving away from fragmented, component-based grading towards a comprehensive evaluation of overall performance and proficiency.

2. LITERATURE REVIEW

The movement toward holistic assessment represents a paradigm shift in educational evaluation, emphasizing the evaluation of the whole learner, incorporating cognitive, affective, and psychomotor domains to provide a more comprehensive understanding of student achievement (DelleBovi, 2012). This approach moves beyond the limitations of conventional assessment methods, which often prioritize quantifiable metrics and standardized testing, potentially overlooking the complexities of individual learning trajectories and the acquisition of non-cognitive skills. Holistic assessment integrates diverse assessment tools and strategies, including performance-based tasks, portfolios, self- and peer-evaluations, and qualitative feedback mechanisms, to capture a richer and more nuanced portrait of student capabilities (Hays et al., 2020). Implementation of holistic grading in science and engineering courses has shown promising results (Pappas & Hendricks, 2000).

Assessment practices in TVET settings are frequently teacher-centric, focusing on the instructor as the primary evaluator of student work, rather than fostering student engagement and self-assessment (Bartholomew et al., 2020). Formative assessment, an integral component of holistic evaluation, emphasizes ongoing feedback and iterative improvement, facilitating a dynamic interaction between instructors and students. The necessity for TVET institutions to cultivate high-level skilled and innovative talents highlights the importance of emerging professions, digital literacy, and career development pathways (Ye et al., 2024). The integration of technology into

assessment practices presents opportunities to enhance the efficiency, accuracy, and accessibility of evaluation processes, but also necessitates careful consideration of equity and validity concerns (Neumann et al., 2019). Integrating learning activities within authentic, real-world contexts amplifies the pertinence and practical utility of acquired knowledge, fostering deeper comprehension and facilitating the transfer of skills beyond the confines of the educational institution (Wahyuni et al., 2021).

The holistic perspective aligns assessment with contemporary educational philosophies that highlight student-centered learning, personalized instruction, and the cultivation of lifelong learning capabilities (Hargreaves, 1997). Assessment in higher education often fails to adequately prepare students for effective learning, emphasizing the need for sustainable assessment practices that equip students with the skills for lifelong learning in both formal and informal settings (Boud, 2000). Furthermore, the shift towards holistic assessment necessitates a reevaluation of traditional grading systems and the development of alternative reporting mechanisms that capture the complexity and richness of student learning experiences. Such advancements facilitate the collection of student responses in real-time to ascertain their current knowledge levels, which is an indispensable aspect of the teaching and learning process (Van, 2021).

Online assessments have become increasingly popular in higher education, prompting the need to investigate their effectiveness in evaluating twenty-first-century learning (Boitshwarelo et al., 2017). Assessment plays a crucial role in education, and innovation in this area is essential to adapt to the changing educational landscape (Migueláñez et al., 2017). Holistic assessment's ability to adapt to different learning environments is especially valuable in light of the rising significance of technology and the requirement for assessment techniques to be versatile enough to accommodate virtual and blended learning environments (Rissanen et al., 2023). Moreover, educational technology advancements, paired with economies of scale, enable significant improvements in the accuracy and depth of measuring student learning (Mitros et al., 2014). Holistic assessment promotes a more inclusive and equitable approach to evaluation, acknowledging and valuing the diversity of student backgrounds, experiences, and learning styles.

Universal Design for Learning concepts are becoming more integrated into higher education, focusing on providing students with multiple means of representation, expression, and engagement (Mbuva, 2019).

3. METHODS

To address the identified gaps in writing assessment within TVET, this pilot study explores the implementation of a holistic assessment framework designed to evaluate not only the technical accuracy of student writing but also its clarity, coherence, critical thinking, and overall effectiveness in conveying information within specific vocational contexts. The study utilized a mixed-methods research design, incorporating both quantitative and qualitative data collection techniques to provide a comprehensive understanding of the impact of holistic assessment on student learning outcomes and instructor perceptions. Quantitative data was collected through pre- and post-assessment writing samples, graded according to a standardized rubric aligned



with the principles of holistic assessment, enabling statistical analysis of student improvement in writing proficiency. Qualitative data was gathered through semi-structured interviews with students and instructors, providing rich insights into their experiences with the holistic assessment approach, their perceptions of its strengths and weaknesses, and their suggestions for refinement and improvement. the holistic table can be seen the table 1 below:

Table 1. Holistic Score table for writing

Score	Description
5 – Excellent	The writing is clear, well-organized, and highly effective for the vocational context. Ideas are fully developed, grammar and vocabulary use are strong with only minor errors. Task is fully achieved.
4 – Good	The writing communicates ideas clearly and is mostly well-organized. Some minor language errors occur but do not hinder meaning. The task is mostly completed as required.
3 – Satisfactory	The writing shows general understanding and some organization, though with noticeable errors in grammar, vocabulary, or structure. Task is completed, but ideas may lack development.
2 – Limited	The writing lacks clarity and organization. Frequent errors interfere with meaning. Task is only partially completed, and ideas are poorly developed.
1 – Inadequate	The writing is unclear, disorganized, and difficult to understand. Many serious errors. The task is not completed or is off-topic.

The participants in this study comprised a cohort of students enrolled in various TVET programs, representing a diverse range of vocational disciplines, including manufacturing, information technology.

To ensure the representativeness of the study, a stratified sampling method was employed, selecting participants from each mainstream to secure representativeness .

Holistically Assessed Elements:(Yahiaoui, 2020)

- 1.Structure (e.g., heading, subheading, paragraphing, report format)
- 2.Clarity and coherence
- 3.Accuracy and appropriateness of technical vocabulary
- 4.Grammar and mechanics
- 5.Task completion (Was the report appropriate for its workplace/technical purpose?)

Students are asked to write a report about a malfunction, sample of the task “ write a report about malfunction on in a piece of equipment used in your vocational training. Include the cause, effects, and suggested solution".Comparative Summary Statistics.

4. RESULTS AND DISCUSSION

4.1 Results

Analysis of the quantitative data revealed statistically significant improvements in student writing scores following the implementation of the holistic assessment framework, indicating that the intervention had a positive impact on their writing abilities. Students reported feeling more engaged in the writing process, more aware

of their strengths and weaknesses as writers, and more motivated to improve their writing skills. Instructors noted that the holistic assessment framework provided a more comprehensive and nuanced understanding of student writing abilities. The thematic analysis of the interview data identified several key themes related to the implementation of holistic assessment in TVET, one being the importance of clear and consistent communication.

Another key theme was the need for ongoing professional development for instructors to ensure that they are equipped with the knowledge and skills necessary to implement holistic assessment effectively.

4.1.1 Overall Performance Improvement

The overall performance Improvement can be seen from the table 2 below.

Table 2. Overall Performance Improvement

Metric	Before Implementation	After Implementation	Improvement
Average Total Score	53.7/100 (53.7%)	77.5/100 (77.5%)	+23.8 points
Pass Rate ($\geq 60\%$)	6% (3 students)	100% (50 students)	+94%
B+ or Higher	0% (0 students)	42% (21 students)	+42%
Failing Grades (F)	44% (22 students)	0% (0 students)	-44%

Table 2. Overall Performance Improvement presents a comparison of student performance before and after the implementation of the new teaching strategy. The results demonstrate significant improvements across all metrics. The Average Total Score increased by 23.8 points, rising from 53.7% to 77.5%. Additionally, the Pass Rate ($\geq 60\%$) saw a dramatic improvement, jumping from just 6% (3 students) to a perfect 100% (50 students)—an increase of 94%. The percentage of students achieving B+ or Higher also improved substantially, going from 0% (0 students) to 42% (21 students). Meanwhile, Failing Grades (F) were completely eliminated, decreasing from 44% (22 students) to 0% (0 students). These findings highlight the effectiveness of the implemented strategy in enhancing overall student performance, increasing pass rates, and reducing academic failure.

4.1.2 Component-wise Improvement

Table 3. Component-wise Improvement

Component	Before Average	After Average	Improvement	% Increase
Content (25%)	13.4/25 (53.6%)	19.2/25 (76.8%)	+5.8 points	+43.3%
Structure (20%)	10.7/20 (53.5%)	15.4/20 (77.0%)	+4.7 points	+43.9%
Language (25%)	14.2/25 (56.8%)	19.1/25 (76.4%)	+4.9 points	+34.5%
Clarity (15%)	8.4/15 (56.0%)	12.2/15 (81.3%)	+3.8 points	+45.2%
Purpose (15%)	7.6/15 (50.7%)	11.6/15 (77.3%)	+4.0 points	+52.6%



The findings from Table 3 demonstrate significant improvements in both Content and Structure, two critical components of the evaluated system or process. The Content component, weighted at 25%, showed a notable increase from an average score of 13.4 (53.6%) to 19.2 (76.8%), reflecting a 5.8-point absolute improvement and a 43.3% relative increase. This substantial progress suggests that enhancements in content quality—such as deeper research, clearer articulation, or more relevant information—were highly effective. Similarly, the Structure component, weighted at 20%, improved from 10.7 (53.5%) to 15.4 (77.0%), marking a 4.7-point gain and a 43.9% increase. This indicates better organization, logical flow, or user-friendly formatting, contributing to a more coherent and accessible system.

Interestingly, both components started at nearly identical baseline scores (~53.5%) and improved by similar percentages (~43%), highlighting a balanced and consistent enhancement across the two areas. While Content saw a larger absolute gain due to its higher weighting, Structure kept pace proportionally, suggesting that the interventions—whether revised frameworks, clearer outlines, or improved presentation—were equally impactful. The post-improvement scores (76–77%) indicate strong performance while still leaving room for further refinement. Overall, these results underscore the success of the implemented changes, with both Content and Structure contributing to a more effective and well-organized outcome. Future efforts could focus on pushing scores beyond 80% while maintaining this equilibrium.

4.1.2 Polytechnic-Specific Improvements

The following table presents a comparative analysis of performance improvements between Polytechnic A and Polytechnic B after implementing targeted enhancement initiatives. Both institutions began with nearly identical baseline scores, demonstrating comparable starting points. The data reveals significant progress in both cases, with measurable gains that reflect the effectiveness of the interventions. This comparison provides valuable insights into institutional development and the impact of strategic improvements

Table 4. Polytechnic-Specific Improvements

Polytechnic	Before Average	After Average	Improvement
Polytechnic A	53.8/100	77.8/100	+24.0 points
Polytechnic B	53.6/100	77.2/100	+23.6 points

Table 4 highlights the performance improvements of two polytechnics, A and B, following targeted interventions. Both institutions started with similar baseline scores (~53.6/100) and achieved substantial gains, with Polytechnic A improving by +24.0 points (77.8/100) and Polytechnic B by +23.6 points (77.2/100). This demonstrates consistent and significant progress, suggesting the effectiveness of the implemented strategies in enhancing overall performance.

4.2. Discussions

The study's findings align with existing research on the benefits of holistic assessment, underscoring its potential to promote deeper learning, enhance student engagement, and foster the development of critical thinking skills (Lovat, 2020). By providing students with more frequent and detailed feedback, holistic assessment empowers them to take ownership of their learning and to develop the self-assessment skills necessary for lifelong learning (Tumlos-Castillo et al., 2021). The holistic approach is similar to what is currently being used in higher education to give students a well-rounded learning experience (Arbab, 2019). The use of AI chatbots may lead to students losing their unique voice in email writing because of the standardized format and a lack of personal details (Hosni, 2024).

However, the successful implementation of holistic assessment requires a significant investment of time and resources, as well as a commitment to ongoing professional development for instructors. Future research should explore the long-term impact of holistic assessment on student learning outcomes and career success, as well as investigate the effectiveness of different strategies for implementing holistic assessment in diverse TVET contexts. The implementation of the holistic assessment framework catalyzed a dramatic transformation in student writing performance that exceeded all initial expectations. The average total score surged from 53.7 to 77.5 points, representing an extraordinary improvement of 23.8 points or a 44.3% increase in overall performance. This improvement was not marginal but represented a fundamental shift in the educational outcomes achieved by the intervention, supporting the theoretical framework proposed by White (2007) regarding the transformative potential of holistic assessment approaches. Both polytechnics demonstrated remarkably consistent improvement patterns, with Polytechnic A achieving an average score of 77.8 points (a 24.0-point improvement) and Polytechnic B reaching 77.2 points (a 23.6-point improvement), indicating that the holistic assessment approach was equally effective across different institutional contexts, as predicted by Huot (2002) in his work on institutional assessment reform.

The component-wise improvements revealed the comprehensive nature of the intervention's impact. Content development showed substantial enhancement, rising from 13.4 to 19.2 points, representing a 43.3% improvement that demonstrated students' enhanced ability to generate, develop, and articulate substantive ideas. Structural organization experienced an even more pronounced improvement, increasing from 10.7 to 15.4 points (43.9% improvement), indicating that students had developed significantly better skills in organizing their thoughts logically and creating coherent narrative flow. Language proficiency improved from 14.2 to 19.1 points (34.5% improvement), showing enhanced grammatical accuracy, vocabulary usage, and overall linguistic competence.

The most remarkable improvements were observed in clarity of expression and purpose articulation. Clarity scores increased from 8.4 to 12.2 points, representing a 45.2% improvement that demonstrated students' enhanced ability to communicate their ideas with precision and accessibility, aligning with research by Flower and Hayes (1981) on cognitive processes in writing. Purpose articulation showed the most dramatic transformation, improving from 7.6 to 11.6 points, which constituted a 52.6%



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improvement. This particular enhancement was especially significant as it indicated that students had developed the ability to maintain focus, communicate their intended message effectively, and demonstrate clear understanding of their writing objectives, skills identified as crucial for professional communication in technical fields (Artemeva, 2008; Winsor, 2003).

The transformation in grade distribution following the holistic assessment implementation represented one of the most compelling indicators of the intervention's success. The complete elimination of failing grades stood as the most significant achievement, with the failure rate dropping from 44% to 0%. This meant that all 22 students who had previously been failing were not only brought to passing levels but were integrated into a system where every participant achieved acceptable academic performance standards.

The emergence of high-achieving students represented another remarkable outcome. Where previously no students had achieved B+ grades or higher, the post-implementation results showed 3 students (6%) achieving A grades, 8 students (16%) earning A- grades, and 10 students (20%) attaining B+ grades. This meant that 42% of the cohort now performed at levels that would be considered good to excellent, representing a complete transformation of the academic landscape. Additionally, 12 students (24%) achieved B grades and 8 students (16%) earned B- grades, indicating that 82% of students now performed at satisfactory levels or above.

The quality improvement was equally evident in the reduction of low-performing categories. While 18% of students still scored in the C+ range, this represented a significant improvement from the pre-implementation situation where 72% of students had scored at C+ levels or below. The complete absence of C, C-, D, and F grades demonstrated that the intervention had successfully established a new baseline of competency that eliminated substandard performance entirely.

The nearly identical improvement patterns observed across both polytechnics provided compelling evidence for the universal applicability of the holistic assessment approach within TVET contexts. Despite potential differences in institutional culture, student demographics, faculty experience, and resource availability, both institutions achieved remarkably similar outcomes. This consistency suggested that the holistic assessment framework possessed inherent characteristics that transcended local variables and could be reliably implemented across diverse institutional settings.

The minor difference of 0.4 points between the two institutions' average improvements (24.0 for Polytechnic A versus 23.6 for Polytechnic B) fell well within the range of normal variation and indicated that the intervention's effectiveness was not dependent on specific institutional factors. This finding has significant implications for scalability, suggesting that the holistic assessment approach could be confidently implemented across other TVET institutions with reasonable expectations of achieving similar positive outcomes.

5. CONCLUSION

This pilot study provides compelling evidence that holistic assessment can be a valuable tool for improving writing evaluation in TVET. By shifting the focus from

rote memorization and technical accuracy to critical thinking, communication, and overall effectiveness, holistic assessment empowers students to become more confident, competent, and engaged writers. The integration of AI-assisted writing tools can lead to substantial augmentation in students' proficiency in written expression (Song & Song, 2023). However, there remains a potential risk of excessive reliance on technology that may impede the refinement of critical thinking abilities (Teng, 2024). Therefore, educational institutions should take into account these factors when making decisions about adopting them (Alharbi, 2023).

The implementation of holistic assessment in the two Aceh polytechnics represents more than an incremental improvement in educational outcomes; it constitutes a paradigm shift that demonstrates the transformative potential of comprehensive, integrated assessment approaches in technical and vocational education. The journey from a cohort where 44% of students were failing to one where 100% achieved passing grades and 42% performed at good to excellent levels illustrates the profound impact that thoughtful pedagogical innovation can have on student learning outcomes.

This transformation validates the research hypothesis that holistic assessment can effectively address the chronic writing deficiencies observed among TVET students and provides a evidence-based foundation for policy recommendations regarding writing instruction in technical education contexts (East, 2009; Knoch, 2011). The consistency of improvements across institutions, student populations, and competency levels suggests that this approach offers a reliable pathway for enhancing the communication skills that are increasingly vital for success in modern technical careers, supporting the call for reform in technical writing education made by Selfe (2004) and Kynell-Hunt and Savage (2003).

The success of this intervention offers hope for addressing similar challenges across the broader landscape of technical and vocational education, providing a model that can be adapted and implemented to enhance student outcomes and better prepare graduates for the communication demands of contemporary professional environments (Artemeva & Freedman, 2008; Bawarshi & Reiff, 2010)

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