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AI-Empowered Journalism English Writing under an OBE Framework: An Intervention Study

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Abstract

The outcome-based education (OBE) framework emphasizes rigorous constructive alignment among learning outcomes, instructional activities, and assessment criteria. Within English for Specific Purposes, particularly Commentary Writing, providing detailed, genre-specific and pedagogically coherent teacher feedback remains challenging. The emergence of artificial intelligence large language models (AI LLMs) offers a potential solution by enhancing feedback quality and enabling an efficient scaffolding approach. This study proposes an AI-empowered teacher scaffolding model in commentary writing teaching, where AI specifically focuses on genre features, informational completeness, and linguistic quality, while the teacher acts as a pedagogical mediator, strategically designing prompts, critically evaluating AI output, and transforming it into personalized and outcome-oriented feedback. It also explores the design principles of this human-machine collaborative feedback system in aligning with OBE outcomes, and students' perceptions of its efficacy. This quasi-experimental intervention study compares an experimental group (AI-mediated scaffolding) with a control group (traditional teacher feedback). Students' pre-revision text (version 1) and post-revision text (version 2) were collected and analyzed. Quantitative analyses included multi-dimensional textual comparisons. Qualitative data from teacher logs and student interviews helped to assess the instructional process and subjective experiences. Findings showed this AI-empowered scaffolding model significantly enhanced students' ability to master news genre conventions and overall writing competencies compared with traditional feedback. Teachers' mediation of AI feedback ensured alignment with OBE learning outcomes and fostered learners' autonomy and critical evaluation skills regarding AI suggestions. This study presents an effective methodology for incorporating LLMs into journalism commentary writing instruction while maintaining pedagogical integrity.

Keywords

AI-empowered education; OBE framework; Large language models; English for Specific Purposes

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1. Introduction

1.1. Context and rationale

The development of professional-level literacy is a fundamental objective in the field of English for Specific Purposes (ESP). Commentary Writing in Journalism requires not only linguistic proficiency but also the mastery of specific genre conventions, such as the inverted pyramid structure, the use of objective voice, and the accurate reporting of facts [1].

The OBE framework requires that all instructional activities and assessments are constructively connected with explicit learning outcomes [2], imposing considerable pressure on educators to provide precise and effective feedback. Traditional teaching approaches often exhibit inconsistency, time limitations, and a tendency to prioritize linguistic errors over critical genre-specific and content-related issues [3].

The advent of AI large language models (LLMs) such as ChatGPT and DeepSeek signals a shift in automated writing feedback. Unlike the automated writing evaluation (AWE) tools, LLMs can generate personalized, genre-aware suggestions [4,5]. This study aims to explore a sustainable and pedagogically robust method—AI-empowered teacher scaffolding—where the human teacher serves as the essential mediator, ensuring the efficacy of AI is aligned with the pedagogical requirements of the OBE framework.

1.2. Research questions

This study aims to answer the following research questions (RQs):

RQ1: To what extent does AI-assisted teacher scaffolding influence improvements in students' commentary writing from pre-revision text (version 1) to the post-revision text (version 2)?

RQ2: How does the teacher's mediation of AI-generated output support the constructive alignment of feedback with pre-defined OBE learning outcomes?

RQ3: What are students' opinions and acceptance of AI-assisted revisions, and how does this process affect their perceived writing autonomy?

RQ4: What are the pedagogical design and ethical challenges faced by teachers when incorporating AI for human-machine collaborative feedback in the classroom?

2. Literature review

2.1. Outcome-based education

The fundamental principle of outcome-based education (OBE) is the focus on outputs—specifically, the competencies a learner should possess after completing the course—rather than merely the inputs. Constructive alignment is the framework of OBE, emphasizing a logical and coherent connection among the anticipated learning outcomes, the teaching/learning activities (e.g., commentary writing tasks), and the assessment criteria (e.g., rubrics) [2]. In this study, the OBE framework guides the commentary writing task design and the specific evaluation metrics, ensuring that the AI feedback is utilized specifically to bridge the gap between students' initial performance and the required learning outcomes.

2.2. ESP and commentary writing discourse analysis

ESP writing instructions on schematic structure and linguistic features of specific discourse types [6,7]. Commentary Writing is defined by specific textual requirements [8], which form the analytical metrics for evaluation:

The evaluation of students' commentary writing focused on three dimensions of journalistic discourse. First, the macro-structure was assessed based on adherence to the inverted pyramid format, which prioritizes the most essential news facts at the beginning, followed by supporting details. Second, the lede quality was evaluated based on the accurate and comprehensive presentation of the 5W1H—who, what, when, where, why, and how—ensuring that the introduction provides readers with a clear and immediate understanding of the news event. Third, key linguistic features were examined, including the employment of an objective tone, accurate attribution of sources, and appropriate application of journalistic terminology. In general, these three dimensions form a comprehensive framework for analyzing students' ability to follow news writing conventions.

2.3. Technology-enhanced writing and feedback

While traditional AWE tools excelled in error detection (grammar, accuracy), current LLMs generate holistic feedback that spans content, tone, coherence, and organization. Crucially, LLMs are capable of scaffolding

students' learning by providing examples, generating alternative phrasings, or outlining structural suggestions.

However, the pedagogical value of AI-generated feedback is maximized only when integrated into teachers' mediation during the teaching process, where teachers are vital to prevent factual inaccuracies, hallucinations, or over-polished corrections. The teacher's role is not replaced but transformed: they become the designer of the AI prompt, the evaluator of AI-generated suggestions, and the curator who ensures the feedback aligns with pedagogical goals. The human-in-the-loop method maintains teacher authority in interpreting, evaluating, and validating AI recommendations to ensure they remain pedagogically relevant.

3. Methodology

3.1. Research design and setting

This study employs a quasi-experimental pre-test/post-test (V1/V2) design, comparing an experimental group (AI-empowered teacher scaffolding) with a control group (traditional teacher feedback). The research was conducted within a compulsory Journalism English commentary writing course at a college, where the curriculum and assessment were explicitly structured to develop professional journalism-related competencies, in alignment with the principles of OBE.

3.2. Participants

Participants were 69 undergraduate students majoring in Journalism or Network and New Media programs. They were randomly assigned to the Experimental Group (EG) and the Control Group (CG).

3.3. Intervention procedure

The intervention followed a three-stage procedure to compare the effects of AI-empowered scaffolding with those of traditional teacher feedback. In the first stage, pre-revision drafting required all participants in both the EG and the CG to produce an initial draft (Version 1) of a commentary writing based on a common scenario and an OBE-aligned rubric. Subsequently, in the second phase, Feedback Intervention was implemented. In the EG, the teacher employed carefully crafted, OBE-aligned prompts to elicit feedback from the LLMs (including DeepSeek, ChatGPT, and Gemini), critically assessed and refined the AI-generated suggestions to ensure the organizational coherence and factual accuracy of the texts, and then delivered the mediated feedback to students. In contrast, the CG received traditional teacher feedback consisting of written comments without the use of AI. Finally, during the third stage, post-revision texts (Version 2) and the data collection stage, all students revised their second version drafts based on the feedback they received. Both pre-revision and post-revision drafts were collected for quantitative analysis, while qualitative data were obtained from teacher logs documenting the mediation process and from student interviews exploring their perceptions of the feedback.

3.4. Data collection and analysis

All pre-revision and post-revision drafts underwent comparative analysis using both a manual scoring rubric and computational linguistic tools.

Data collection and analysis proceeded in two phases: quantitative textual metrics and qualitative exploration. In the quantitative phase, the pre-revision and post-revision drafts from both groups were analyzed using a multi-dimensional standard to examine the impact of AI-assisted teacher scaffolding on improvements in students' commentary writing. The texts discourse were rigorously evaluated across four key dimensions: Genre and content (including assessing the completeness of the 5W1H and adherence to the inverted pyramid structure); Linguistic quality (including measuring grammatical error frequencies, lexical diversity, and sentence complexity); Revision behavior (distinguishing between local and global modifications); and, critically, OBE outcome achievement (scoring the post-revision draft against a rubric explicitly aligned with the anticipated learning outcomes Journalism English courses). Quantitative analysis, primarily using paired-sample and independent-sample *t*-tests, was then applied to compare the gain scores between the Experimental and Control Groups.

During the qualitative phase aiming to explore teachers mediation effect, students' opinions and possible challenges, qualitative data were collected from teacher logs, which documented the details of their prompt adjustment, accuracy checking, and ethical considerations during mediation process, and from student interviews,

which explored their perceptions of feedback clarity, impact on autonomy, and the extent of developing their critical evaluation skills regarding AI suggestions. Thematic analysis was then applied to interpret these qualitative data, providing a deeper understanding of the quantitative results.

4. Results and discussion

4.1. Quantitative findings: Enhanced genre awareness

We found a statistically significant increase in the gain score from post-revision writing to pre-revision writing for the experimental group compared to the control group across most rubrics.

The most substantial differences were in genre features, particularly in genre-specific structural conformity and lede quality. All participants in the experimental group (n = 69) demonstrated a clear awareness of key journalistic genre features, as evidenced by their use of the 5W1H framework and following the inverted pyramid structure when organizing their texts. AI, with correct prompts validated by the teacher, can provide systemic, structural feedback that is difficult to deliver manually and consistently. Therefore, the application of LLMs facilitates deeper, macro-level revisions essential for genre-appropriate commentary writing.

In terms of revision behavior, the experimental group showed a higher proportion of comprehensive restructuring and content revisions. The majority of students (n = 65) demonstrated a noticeable revision behavior after receiving the teacher-mediated AI suggestions. This pattern would suggest that AI-empowered scaffolding encouraged students to engage in a journalism English commentary writing task consciously with meaning, structure, and information completeness, rather than focusing solely on vocabulary and grammar corrections.

Regarding linguistic quality, although both EG and CG groups demonstrated a decline in vocabulary and grammatical error rate, a mean score from 67 to 84, the experimental group exhibited greater improvement in lexical diversity—particularly in the use of journalistic terminology. This reflects the LLM's capacity to provide students with context-specific, appropriate, and profession-specific vocabulary suggestions.

4.2. Qualitative findings: OBE alignment through mediation (RQ2 & RQ4)

The qualitative data will illuminate the mechanism by which the AI-empowered scaffolding achieves OBE alignment.

The qualitative data helped clarify how AI-empowered scaffolding supports alignment with OBE principles. In exploring the impact of teachers' mediation of AI output, teacher logs revealed their deliberate efforts to refine AI-generated suggestions so that to correspond to the outcome-based principle—the fundamental principle of the OBE framework. For example, as Teacher Log 1 reported:

The initial AI suggestion was "Improve the lead section and Improve source clarity," which were too broad and vague. I refined the prompts to "5W1H elements are missing in the news lead, and ensure all quotations are attributed to verifiable sources."

A generic AI comment, such as "Improve clarity," was transformed by the teacher into a more targeted, outcome-aligned instruction. This underscored the teacher's indispensable role as a pedagogical gatekeeper who adapts AI output to meet specific teaching objectives and outcome rubrics to ensure constructive alignment under the OBE framework.

In relation to students' opinions and acceptance of AI-assisted revisions, Teachers reported using substantial time in fact-checking AI suggestions, refining prompts to minimize irrelevant feedback, and monitoring their teaching requirements to avoid excessive scaffolding. Ethical concerns may also occur, particularly regarding the risk of students over-relying on AI-generated revisions. As Teacher Log 2 reported:

I usually keep the AI suggestion but provide a simplified explanation to ensure students understand.

I observed that when the AI proposes revisions, it inhibits students from making independent decisions. To prevent over-dependence, I began writing comments like: "Reflect on whether adding this detail improves factual clarity."

As a result, teachers emphasized the importance of encouraging students to critically evaluate—rather than

blindly adopt—AI recommendations, developing learners' autonomy.

4.3. Student autonomy and acceptance

Students in the EG reported great satisfaction with the timeliness and personalization of the feedback. As in student interview 3:

I feel more in control now. AI gives me options, but I decide what to use. I used to rely too much on correction tools. Now, I use AI more strategically.

Crucially, both teachers' logs and students' interview data demonstrated that the teacher's mediation encouraged a critical approach. Instead of viewing the AI as a final evaluator, students ought to critically evaluate AI suggestions as draft advice with their own judgment, thus potentially fostering professional commentary writing skills and the ability to critically evaluate AI-generated advice against their professional genre knowledge.

5. Conclusion and implications

This study validated the effectiveness of the AI-empowered teacher scaffolding in ESP instruction, specifically for Journalism English Commentary Writing under the OBE framework. By applying LLMs to generate personalized and detailed feedback and strategically adjusting feedback to align with learning outcomes, teachers can significantly raise students' professional genre awareness, enhance the mastery of conventions, and overall commentary writing ability. The findings underscore that the interplay of human tutors and Artificial Intelligence offers a potential pathway for achieving innovative talent cultivation in a technologically advanced era.

5.1. Theoretical and practical contributions

This research proposed and tested a practical model of "AI-empowered teacher scaffolding in English for Specific Purpose (ESP) teaching," incorporating LLMs into the established OBE framework. The findings offered insights for ESP educators on designing effective LLM prompts and implementing a critical teaching process to ensure that LLMs facilitate pedagogically sound learning outcomes.

5.2. Limitations and future research

This study's limitations include its relatively short intervention period and focus solely on Journalism English commentary writing. Future research may address these limitations in several ways. First, A longitudinal study would allow for assessment of the long-term impact on improving writing skills. Second, applying the proposed model to other ESP domains, such as Medicine English, Art English, to test its generalizability across disciplinary contexts. Finally, there is a need to develop an effective framework for teacher prompts training specifically tailored for different OBE learning outcomes.

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