Transforming English Correspondence Learning Through Flipped Classroom-Based Materials

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Abstract:

This study aimed to develop flipped classroom-based teaching materials for the English Correspondence course to improve students' comprehension of professional written communication. The research was motivated by the limitations of conventional lecture-centered instruction, which often restricts student engagement and provides insufficient opportunities for independent and practice-oriented learning. A research and Development (R&D) approach employing the 4D model (Define, Design, Develop, Disseminate) was applied to systematically design, validate, and evaluate the instructional product. Data were collected through needs analysis, expert validation, student response questionnaires, and effectiveness testing using a pretest–posttest design. Expert validation results indicated a validity level of 86%, categorized as very valid, while practicality testing showed an 84% score, demonstrating that the materials were accessible and supportive of independent learning. Effectiveness testing revealed a significant improvement in students' performance, with mean scores increasing from 58.51 (pretest) to 80.54 (posttest) and an N-gain value of 0.54, indicating moderate learning improvement. These findings suggest that flipped classroom-based teaching materials effectively enhance students' conceptual understanding and practical competence in English business correspondence. The study implies that integrating validated digital instructional materials with student-centered learning models can strengthen technology-supported pedagogy and provide a scalable framework for improving professional communication learning in higher education.

Key Words: *Flipped Classroom, Teaching Material Development, English Correspondence*

INTRODUCTION

Current English Correspondence instruction commonly relies on textbooks and lecturer-centered explanations because these resources are readily available and familiar to instructors (Haerazi, 2023; Heo, 2025; Hnatyk et al., 2025). Nevertheless, field observations and informal surveys among students indicated that such materials lack interactive components and contextual practice aligned with real business communication scenarios. Students reported difficulties understanding letter structures and communication tone, demonstrating that existing materials emphasize content delivery rather than skill application. Needs analysis questionnaires showed that a majority of

students preferred digital learning resources that could be accessed before class, indicating a mismatch between learner expectations and instructional practices.

Previous educational technology studies suggest that digital learning environments enhance comprehension when learners engage with materials independently prior to classroom activities (Lea & Eng, 2021; Mancin et al., 2024; Schanz & Giles, 2021). Despite these advantages, structured flipped classroom teaching materials specifically designed for business writing remain limited in higher education contexts (Hu & Zhu, 2023; Pathan & Qureshi, 2024; Zhao, 2022). Therefore, the inadequacy of conventional learning resources establishes a clear rationale for developing innovative instructional materials tailored to professional communication learning needs.

Several studies have explored the implementation of the flipped classroom in language learning because technology-supported instruction is considered effective in fostering active learning environments (Adhami & Taghizadeh, 2024; Jeong & González-Gómez, 2025; O'Malley et al., 2023). Research by Lo & Hew (2021) demonstrated that flipped learning improved student engagement through pre-class video materials. However, the study primarily focused on general classroom strategies rather than instructional product development. Similarly, Yarım et al. (2024) reported improved motivation and reduced cognitive load in flipped classrooms, although their work emphasized theoretical explanation rather than validated teaching materials. Other R&D-based studies in digital learning development have shown positive effectiveness results, with learning gains increasing after structured multimedia integration; however, many of these studies focused on listening or speaking skills rather than professional writing competencies (Rintayati, 2023; Sabareedharan M, 2025; Suryani et al., 2025). These findings indicate that flipped learning approaches are promising but remain partially implemented when not supported by systematically designed instructional materials. Consequently, existing research reveals a methodological and practical gap, as few studies have developed and empirically validated flipped classroom teaching materials specifically for English business correspondence learning.

Despite the growing adoption of flipped classroom approaches, instructional implementation often remains ineffective because educators lack validated teaching materials specifically designed for independent pre-class learning. Observations in English Correspondence courses showed that students entered classroom sessions without adequate preparation, limiting meaningful discussion and application activities. The needs analysis results further indicated that students required structured guidance, contextual examples, and interactive exercises to understand professional communication conventions. Existing resources fail to systematically integrate these elements, resulting in fragmented learning experiences that do not fully support skill development (Siregar et al., 2024). This mismatch between instructional design and learner needs represents a critical practical gap in higher education language instruction. Without carefully developed learning materials, flipped classroom strategies risk becoming procedural changes rather than pedagogical improvements. Therefore, the central research problem lies in the absence of empirically validated flipped

classroom teaching materials that enhance comprehension and practical writing competence in English Correspondence learning contexts.

This study introduces innovation by developing flipped classroom teaching materials specifically designed for professional English correspondence learning, as existing flipped learning research rarely integrates structured instructional product development into business writing contexts. The proposed product combines digital learning videos, interactive modules, and genre-based correspondence tasks organized into pre-class, in-class, and post-class learning phases. Unlike conventional materials that emphasize theoretical explanation, the developed product prioritizes contextual practice aligned with authentic workplace communication scenarios. The integration of validated instructional design with flipped learning principles advances both pedagogy and technology, ensuring that students actively construct knowledge before classroom interaction. From a theoretical perspective, the study extends flipped classroom research into the domain of professional written communication, an area that remains underexplored compared to oral language skills. Practically, the product offers educators a ready-to-use instructional model that supports independent learning and enhances classroom interaction, thereby addressing both conceptual and real-world instructional challenges.

This study aims to develop, validate, and evaluate the effectiveness of flipped classroom-based teaching materials for English Correspondence learning using a research and Development approach based on the 4D model (Define, Design, Develop, Disseminate). The research begins with a needs analysis to identify instructional challenges and learner requirements, followed by the design and development of digital teaching materials aligned with flipped learning principles. Expert validation assesses content accuracy, instructional design quality, and media feasibility, ensuring product validity before implementation. The developed materials are then tested through limited and field trials to evaluate practicality and effectiveness using student responses and pretest–posttest learning outcomes. Product revisions are performed iteratively based on empirical feedback to enhance usability and instructional alignment. Through this systematic R&D cycle, the study seeks to produce empirically validated teaching materials that improve students' comprehension and professional communication skills while advancing innovation in technology-supported higher education learning.

RESEARCH METHODS

This study was conducted in the Office Administration Education Study Program at the Faculty of Economics and Business, Universitas Negeri Jakarta, where students are expected to master professional written communication skills in English Correspondence. However, conventional lecture-centered instruction has frequently limited students' comprehension and practical writing performance, resulting in a gap between theoretical learning and workplace communication demands. This context was selected because existing studies on flipped classroom implementation predominantly emphasize speaking and

listening skills, while the development of structured instructional materials for business writing remains limited (Zhao, 2022).

To address this gap, the study adopted a Research and Development (R&D) approach using the 4D development model proposed by Liu et al. (2025), consisting of the Define, Design, Develop, and Disseminate stages. The model was selected because it provides a systematic framework integrating needs analysis, instructional design, validation, revision, and field implementation, ensuring that the developed teaching materials are theoretically grounded and empirically tested for practical use in authentic learning environments (Moloo et al., 2023; Reigeluth et al., 2024; Ubaidah et al., 2023).

The overall development procedure applied in this study is illustrated in **Figure 1**.

Figure 1. Stages of the 4D Development Model

The product development process followed iterative procedures beginning with the define stage, which involved needs analysis through literature review, classroom observations, and interviews with lecturers and students to identify learning difficulties in English Correspondence. The design stage focused on developing flipped classroom-based instructional materials, including learning videos, digital modules, and case-based exercises organized into pre-class, in-class, and post-class learning activities. These stages ensured alignment between learning objectives, instructional strategies, and assessment procedures within the flipped learning framework (Shamsi Lameshkani et al., 2024).

Data collection employed multiple instruments to ensure comprehensive evaluation. Questionnaires were used to measure students' level of understanding and learning experiences after using the developed materials. The structure of the student understanding instrument was adapted from Brundage (2023), covering conceptual understanding, information acquisition, and active participation dimensions. The construct of the instrument is presented in **Table 1**.

Table 1. Dimensions of Student Understanding Instrument

Dimension	Indicators	Number of Items	Source
Concept Understanding	Ability to redefine, explain, and apply learning concepts	4	Andiansyah (2020)
Information Acquisition	Independent learning and discussion-based understanding	3	Andiansyah (2020)
Active Participation	Engagement and participation during learning activities	2	Andiansyah (2020)

In addition, student response questionnaires were administered to evaluate the practicality and usability of the flipped classroom teaching materials. The questionnaire structure was developed based on Shen (2023), focusing on learning activities, ease of learning, and perceived learning benefits. The instrument framework is summarized in **Table 2**.

Table 2. Student Response Questionnaire Structure

Dimension	Indicators	Number of Items	Source
Learning Activities	Engagement and interaction during learning	4	Smith & Brown (2023)
Ease of Learning	Accessibility and ease of material use	3	Smith & Brown (2023)
Learning Benefits	Improvement of comprehension, skills, and confidence	4	Smith & Brown (2023)

Expert validation sheets were used to assess content accuracy and instructional design quality, while preliminary trials involving students collected feedback regarding practicality and accessibility. Pretest and posttest instruments were also administered to measure students' learning outcomes. The combination of interviews, observations, documentation, and structured questionnaires enabled data triangulation, ensuring that product refinement was informed by both expert judgment and user experience throughout the development process (Jiménez Chaves, 2021).

Product validation and effectiveness evaluation were conducted to determine the validity, practicality, and instructional effectiveness of the developed materials. Expert validation data were analyzed using descriptive statistics, including mean scores and percentage calculations, to classify product feasibility according to predetermined validity criteria (Li & Lay, 2024). Student response questionnaire data were similarly analyzed using percentage scores to evaluate practicality levels. To measure effectiveness, students' learning outcomes were analyzed through pretest and posttest comparisons. Learning improvement was calculated using normalized gain (N-gain) analysis to determine the magnitude of improvement relative to initial performance levels (Chadha et al., 2022).

Quantitative findings were supported by qualitative feedback obtained from open-ended responses and observation notes, enabling triangulation during product revision. Reliability was strengthened through multiple expert assessments and consistent evaluation procedures. The integration of descriptive statistical analysis and effectiveness testing ensured that conclusions regarding the teaching materials were supported by empirical evidence, demonstrating that the developed flipped classroom product was both pedagogically valid and practically effective in improving students' comprehension skills in English Correspondence learning.

RESULTS AND DISCUSSION
Results

This study aimed to develop flipped classroom-based teaching materials for the English Correspondence course and evaluate their validity, practicality, and effectiveness in improving students' comprehension skills. The development process followed the 4D model consisting of define, design, develop, and disseminate stages. The findings demonstrate that the developed materials met high instructional quality standards and positively influenced students' learning outcomes.

The validation results conducted by material, media, and instructional design experts showed that the developed flipped classroom teaching materials achieved an average validity score of 86%, categorized as *very valid*. Material experts confirmed that the content was aligned with course learning outcomes and reflected authentic business correspondence practices. Media experts evaluated the visual layout, readability, and accessibility positively, while instructional design experts provided suggestions related to strengthening learning integration. The detailed results of expert validation are presented in **Table 3**.

Table 3. Expert Validation Results of Flipped Classroom Teaching Materials

Validation Aspect	Material Expert (%)	Media Expert (%)	Design Expert (%)	Category
Content suitability with learning outcomes	88	–	–	Very Valid
Language clarity and readability	85	–	–	Very Valid
Visual appearance and layout	–	96	80	Very Valid
Accessibility and usability	–	94	–	Very Valid
Learning integration and instructional flow	84	–	78	Valid
Average Score		86		**Very Valid**

As shown in **Table 3**, the highest evaluation was obtained from media experts, particularly in visual appearance and accessibility aspects, indicating that the digital teaching materials were highly suitable for independent learning environments. Meanwhile, design experts emphasized the importance of improving instructional integration to strengthen learning coherence.

These findings indicate that the developed teaching materials fulfilled essential instructional design principles, particularly clarity of learning objectives, content relevance, and learner accessibility. In the context of flipped learning, validated instructional materials play a crucial role because students rely on pre-class learning resources as their primary exposure to conceptual knowledge. Without well-structured materials, flipped learning may fail to achieve meaningful engagement. Therefore, strong validation results suggest that the instructional foundation necessary for flipped classroom implementation was successfully established.

Practicality of Teaching Materials

The practicality of the flipped classroom-based teaching materials was evaluated through a limited trial involving students enrolled in the English Correspondence course. The practicality assessment aimed to measure students' perceptions regarding ease of use, attractiveness, accessibility, and the ability of the teaching materials to support independent learning. The results indicated that the developed materials obtained an average practicality score of 84%, categorized as *practical*.

Students reported that the teaching materials were easy to access through digital devices and provided clear instructions for pre-class learning activities. The availability of videos, structured modules, and guided exercises enabled students to prepare before classroom meetings, allowing in-class sessions to focus more on discussion and application activities.

The detailed results of the practicality assessment are presented in **Table 4**.

Table 4. Practicality Test Results Based on Student Responses

Indicator	Mean Score (Scale 1–5)	Percentage (%)	Category
Ease of use	4.2	84	Practical
Learning attractiveness	4.3	86	Practical
Independent learning support	4.1	82	Practical
Clarity of instructions	4.2	84	Practical
Accessibility (online/offline)	4.2	84	Practical
Overall Practicality Score	**84%**		**Practical**

As shown in **Table 4**, the highest score was obtained in the learning attractiveness aspect, indicating that students perceived the flipped classroom materials as engaging and motivating. Meanwhile, the independent learning support indicator also achieved a high score, suggesting that the materials successfully facilitated self-paced learning prior to classroom interaction.

From a pedagogical perspective, these findings demonstrate that the flipped classroom approach promotes student autonomy and encourages preparation before face-to-face learning sessions. The practicality results indicate that students were able to navigate learning resources independently without significant technical or instructional difficulties. This condition is essential in flipped learning environments, where pre-class engagement determines the effectiveness of in-class collaborative activities.

Furthermore, the positive student responses suggest that the integration of digital learning materials reduced reliance on lecturer-centered explanations and shifted learning toward a more student-centered process. The practicality level achieved confirms that the developed teaching materials are feasible for broader implementation in English Correspondence learning contexts.

Effectiveness of Flipped Classroom Teaching Materials

The effectiveness of the developed flipped classroom-based teaching materials was evaluated by comparing students' learning outcomes before and after implementation through pretest and posttest assessments. This stage aimed to determine whether the use of flipped classroom materials significantly improved students' comprehension skills in the English Correspondence course.

The results showed a substantial increase in students' learning achievement after the intervention. The average pretest score was 58.51, which increased to 80.54 in the posttest. This improvement indicates that students demonstrated better conceptual understanding and practical ability in composing professional English correspondence after engaging with the flipped classroom learning materials.

The descriptive statistics of students' learning outcomes are presented in **Figure 2**.

Figure 2. Comparison Diagram of Pretest and Posttest Results

As shown in **Figure 2**, the increase in the mean score reflects a clear improvement in student comprehension following the implementation of flipped classroom-based teaching materials. The higher minimum score in the posttest also indicates that overall student performance improved, suggesting that the learning intervention benefited not only high-achieving students but also those with lower initial understanding.

To further examine learning improvement, an N-Gain analysis was conducted to measure the effectiveness of the intervention relative to students' initial performance levels. The results of the N-Gain analysis are presented in **Table 5**.

Table 5. N-Gain Analysis of Learning Improvement

Category	N-Gain Range	Number of Students	Percentage
High	> 0.70	6	16%
Medium	0.30 – 0.70	28	76%
Low	< 0.30	3	8%
Average N-Gain	**0.54 (Moderate)**		

The average N-Gain score of 0.54, categorized as moderate improvement, indicates that the flipped classroom teaching materials were effective in enhancing students' comprehension skills. The majority of students (76%) achieved improvement within the medium category, while only a small proportion showed low improvement. This distribution suggests that the learning intervention produced consistent learning gains across different student ability levels.

From a pedagogical perspective, the improvement can be explained by the restructuring of learning activities inherent in the flipped classroom model. Students first interacted with instructional materials independently before classroom meetings, allowing them to acquire foundational knowledge at their own pace. Consequently, classroom sessions could be devoted to higher-order learning activities such as discussion, analysis of business letter structures, and collaborative problem-solving.

This separation between knowledge acquisition and knowledge application reduced cognitive overload during classroom instruction and enabled deeper processing of learning content. As a result, students demonstrated improved comprehension and greater confidence in applying professional communication conventions in English correspondence tasks.

The findings also support constructivist learning principles, where understanding develops progressively through interaction, reflection, and guided practice. By integrating digital materials, case-based exercises, and collaborative classroom activities, the flipped classroom environment facilitated meaningful learning experiences that contributed to measurable improvement in student learning outcomes.

Discussion

The present study aimed to develop flipped classroom-based teaching materials for English Correspondence learning and evaluate their validity, practicality, and effectiveness through a research and Development (R&D) framework. The findings from each stage of the development process demonstrate that the resulting product successfully addressed both instructional needs and theoretical gaps related to technology-supported business writing instruction.

The initial development stage (define and design phases) was conducted to identify learning problems and establish instructional requirements. Needs analysis revealed that conventional lecture-centered instruction limited students' engagement and practical understanding of professional English correspondence. These findings confirmed previous arguments that effective instructional innovation must begin with systematic needs assessment to ensure alignment between learning objectives and learner characteristics (Azizi & Al-Fajri, 2025; Purba, 2024; Sjunnesson, 2022). The design stage translated these needs into flipped classroom learning materials comprising instructional videos, digital modules, and case-based exercises, structured into pre-class, in-class, and post-class activities. This structure reflects constructivist learning principles, where students actively construct knowledge through interaction and practice rather than passive reception (Mariam et al., 2026; Sa'i & Nugroho, 2025; Seifert, 2023). Therefore, the development phase directly addressed the research objective of creating instructional materials that promote independent learning and deeper comprehension of professional communication tasks.

The expert validation stage demonstrated that the developed product achieved a validity score of 86%, indicating very high validity. This result indicates that the teaching materials met essential criteria of instructional quality, including content relevance, media usability, and instructional design coherence (Kozlowska-Barrios, 2023). Expert feedback also guided product revisions, particularly by strengthening instructional integration and improving the clarity of learning instructions. Iterative revision is a core characteristic of R&D methodology, ensuring that products evolve through systematic refinement before broader implementation (Patzer & Lehmann, 2025). The high validation score suggests that the product possesses strong content validity and design appropriateness, supporting its reliability as an instructional tool. Similar findings were reported by Hew et al. (2021), who emphasized that the success of flipped classroom implementation depends heavily on well-designed learning materials that guide students during independent learning phases.

The limited trial stage evaluated the product's practicality from the users' perspective. The practicality score of 84% indicates that students perceived the materials as accessible, engaging, and supportive of independent learning. This result confirms that the flipped classroom structure successfully shifted learning responsibility toward students while maintaining instructional clarity. The positive response demonstrates that digital teaching materials facilitated self-regulated learning, allowing students to control learning pace and revisit

materials before classroom interaction. According to Unal et al. (2024), flipped learning environments enhance motivation and reduce cognitive overload when students are provided with structured pre-class learning resources. The practicality findings therefore indicate that the developed materials not only functioned technically but also aligned with pedagogical principles supporting learner autonomy and engagement.

The effectiveness test conducted during the field implementation stage revealed significant improvement in students' learning outcomes. The mean score increased from 58.51 in the pretest to 80.54 in the posttest, with an average N-gain of 0.54, indicating moderate improvement. This result indicates that the flipped classroom-based materials effectively enhanced students' comprehension of English correspondence concepts and practices. The improvement suggests that separating knowledge acquisition (pre-class learning) from application activities (in-class practice) allowed students to process information more deeply and engage in higher-order learning tasks. Previous studies have similarly shown that flipped classroom approaches improve learning achievement by reallocating classroom time toward collaborative problem-solving and contextual practice (Hu & Zhu, 2023; Lea & Eng, 2021; Pathan & Qureshi, 2024). Thus, the empirical findings support the theoretical assumption that flipped learning promotes meaningful learning through active engagement and repeated interaction with instructional content.

Compared with conventional teaching methods and earlier flipped classroom studies focusing primarily on speaking or listening skills, the developed product introduces innovation by targeting professional business writing through structured instructional material development. The integration of genre-based correspondence tasks, digital learning resources, and scaffolded learning activities represents a significant improvement over traditional lecture-based approaches. Unlike previous implementations that emphasized teaching strategies alone, this study contributes an empirically validated instructional product. This distinction strengthens both pedagogical innovation and practical applicability, as the developed materials provide a concrete model that can be replicated or adapted in similar vocational education contexts.

CONCLUSION

The study addressed the persistent challenge of limited student comprehension and practical competence in English Correspondence learning, which has often resulted from lecture-centered instructional approaches that provide insufficient opportunities for active engagement and independent learning. By developing flipped classroom-based teaching materials through a systematic research and Development framework, this research sought to bridge the gap between theoretical instruction and professional communication practice. The findings demonstrate that the developed product achieved high validity through expert evaluation, strong practicality as indicated by student responses, and measurable effectiveness, as evidenced by improved learning outcomes and a moderate N-gain score. These results confirm that structured

flipped classroom materials can enhance students' conceptual understanding and practical skills in composing professional English correspondence.

The broader significance of these findings lies in the potential to integrate validated digital instructional materials with student-centered learning models to support deeper, more flexible learning experiences in higher education. The developed product not only contributes to pedagogical innovation in language and vocational education but also provides a practical model that educators can adapt to similar learning contexts requiring professional communication competencies. Future studies are encouraged to examine long-term learning impacts, involve more diverse participant groups, and explore comparative experimental designs to strengthen further the evidence regarding flipped classroom effectiveness. Overall, this study highlights the importance of systematic instructional design in transforming technology-supported learning into meaningful educational outcomes.

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