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A Comparative Study of Cohesive Device Usage in Paragraph Writing Among EFL Learners in Flipped, Blended, and Face-to-Face Learning Environments

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Abstract

The use of educational technology (Ed-Tech) and the Internet in acquiring foreign language skills has led to an increased interest in alternative teaching strategies such as flipped and blended learning. This study investigates the effects of flipped, blended, and traditional face-to-face teaching methods on the utilization of cohesive devices in paragraph writing among EFL learners. From a pool of 110 junior EFL students, 90 participants were selected. Afterwards, they were randomly divided into three groups: flipped, blended, or face-to-face. To evaluate their paragraph writing abilities, a pretest was conducted prior to the treatment. The first comparative group received instruction using the flipped teaching method, while the second group experienced a blended learning environment (combining face-to-face and online classes). The control group received traditional face-to-face instruction. Following the treatment sessions, all groups completed a posttest on paragraph writing. The findings indicated that both the flipped and blended groups demonstrated significantly better performance compared to the control group. These results provide valuable insights for EFL teachers, curriculum designers, and learners.

Keywords: blended classes, paragraph writing, flipped classes, face-to-face classes

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1. Introduction

During the early 1980s, the incorporation of technology in language learning courses commenced by utilizing audio cassettes and videotapes. As time passed, the progression of educational technology (Ed-Tech) and the introduction of the Internet and web-based technologies have led to substantial transformations in numerous facets of human existence, including education (Sah, 2015; Teng, 2021). Ed-Tech tools have played a crucial role and had a significant impact on learning across different fields of study, including second/foreign language (SL/FL) learning (Li et al., 2019).

The implementation of Ed-Tech in educational settings has led to the emergence of a cohort of learners referred to as Digital Natives (Prensky, 2001). These learners have distinct preferences, expectations, and learning styles compared to previous generations who were educated in traditional contexts (Garrison & Anderson, 2003). Furthermore, the global COVID-19 pandemic has forced educational systems and institutions, such as schools, universities, colleges, and language institutes, to adapt to new limitations and changes (Moser et al., 2021). In response, the education system and institutions have become responsible for promoting community resilience and addressing the social, psychological, physical, cultural, and economic needs of communities (MacIntyre et al., 2020). Consequently, educators and researchers, including SL/FL instructors, are seeking new teaching contexts, approaches, and strategies to meet the evolving expectations of learners while addressing current social limitations and enhancing learning outcomes (Chvala, 2020).

According to Vivek and Ramkumar (2021), flipped and blended classes are examples of innovative language teaching strategies that cater to the needs of the new generation of learners. These strategies create learning environments that can be facilitated through various virtual language platforms (He, 2020). Flipped teaching, as an innovative method (Stöhr et al., 2020), involves reversing the sequence of classroom activities and homework assignments (Shi et al., 2020). Blended teaching, another novel approach, combines face-to-face instruction with online learning tools, taking advantage of advancements in the Internet and Ed-Tech (Rasheed et al., 2020). A blended class, simply defined by Gaol and Hutagalung (2020), refers to a learning environment that integrates both electronic learning (e-learning) and face-to-face pedagogy to enhance the quality of learning (Bond, 2020; Wang et al., 2019).

In both flipped and blended classes, learners are provided with instructional materials, such as videos and audio files, prior to the class (Lee & Martin, 2020). This pre-class exposure helps learners activate their existing knowledge and prepare for the topic during the class (Alharabi, 2015; Blair et al., 2016), thus enhancing their comprehension of new information through schema activation (Morimoto & Loewen, 2007). Moreover, by shifting the learning responsibility to learners in flipped classes and sharing this responsibility between learners and teachers in blended classes, these strategies create an active learning context (Chen Hsieh et al., 2016; Ting Hung, 2017).

Flipped and blended teaching methods have been found to improve learners' reading, speaking, listening, and writing skills (Mehring, 2016; Amiryousefi, 2019; Wang et al., 2018; Ahmad, 2016; Challob, 2021; Fathi & Rahimi, 2020). Since the fluency and accuracy of language learners are evaluated based on their productive skills, including writing and speaking, it is crucial to employ effective teaching methods and learning environments to foster successful development in writing and speaking skills (Roquet & Pérez-Vidal, 2017).

Given the persuasive and influential power of words, many researchers (e.g., Min, 2013; Yasuda, 2019) have emphasized the importance of providing learners, including those studying English as a Foreign Language (EFL), with professional writing instruction to become proficient writers. The acquisition of excellent writing skills enhances learners' chances of academic success (Zhang, 2018). Attaining a satisfactory and standardized level of writing proficiency for SL/FL learners is closely tied to their mastery of critical writing criteria, techniques, features, and characteristics, such as unity, completeness, cohesion, coherence, paragraph structure, and format (Defazio et al., 2010). Among these criteria, cohesion holds great significance (Chang et al., 2019) as it involves effectively connecting different parts of a text to maintain its coherence (Liu et al., 2005).

The majority of SL/FL learners often struggle with cohesion and the accurate use of cohesive devices in their writing (Birjandi & Malmir, 2009; Mohamadi Zenouzagh, 2018). As a result, considering the criticality of developing writing skills as a foundation for academic and professional success in SL/FL learners, along with their difficulties in this area, and recognizing the importance of exploring the effectiveness and impact of Ed-Tech-enhanced learning environments and teaching methods, including flipped and blended strategies, this study examines the effect of flipped and blended teaching strategies on EFL learners' utilization of cohesive devices in paragraph writing. Accordingly, the following research questions are proposed:

Q1: Do flip and blended teaching strategies enhance the use of cohesive devices in paragraph writing among intermediate EFL learners compared to conventional teaching methods?

Q2: Is there a significant difference between the impact of flipped and blended teaching strategies on the improvement of intermediate EFL learners' use of cohesive devices in paragraph writing?

By investigating these research questions, this study contributes valuable insights to EFL instructors, curriculum designers, and learners, facilitating informed decision-making and the development of effective teaching practices.

2. Literature Review

2.1. Flipped Teaching Strategy

Previous research studies have examined the impact of flipped teaching strategies on various aspects of language learning. Samiei and Ebadi (2021) investigated the effect of the flipped class on

learners' reading comprehension skills and found that this innovative method encourages learners to engage in more reading. Gündüz and Akkoyunlu (2019) explored learners' experiences in flipped classes and concluded that participants in flipped classes have a greater sense of responsibility for their own learning compared to those in traditional classes. Abdullah et al. (2019) and Adnan (2017) studied learners' perceptions of the flipped class and confirmed that learners have a positive perception, attitude, and learning experience in this teaching approach. Chen Hsieh and colleagues (2016) conducted an assessment on the impact of the flipped classroom approach on EFL students' motivation and proficiency in learning English idioms. Their study revealed notable enhancements in both motivation and proficiency among the participants. Kvashnina and Martynko (2016), as well as Haghighi et al. (2019), analyzed the relevance and usefulness of the flipped class in EFL teaching and reported that participants in the flipped class showed high motivation and improved autonomous learning skills. Evseeva and Solozhenko (2015) and Yang and Chen (2020) assessed learners' acceptance and attitude toward the flipped class and found a high level of acceptance and positive attitude. Güvenç (2015) and Hung (2015) investigated students' viewpoints regarding flipped writing classes in comparison to traditional writing classes and discovered that most learners held positive perceptions of the flipped approach. Numerous comparative studies conducted by Leis et al. (2015), Ahmed (2016), Afrilyasanti et al. (2016), Ekmekci (2017), Soltanpour and Valizadeh (2018), and Wu et al. (2020) examined the effect of the flipped classroom model on enhancing students' writing proficiency. These studies consistently demonstrated significant improvements in writing proficiency and performance among students enrolled in flipped classes.

2.2. Blended Teaching Strategy

Blended teaching strategies have also been investigated in previous research studies. Bahari et al. (2021), Ghazizadeh, and Fatemipour (2017), and Yang (2012) evaluated the effect of blended teaching strategies on EFL students' reading ability and found positive impacts on improving reading proficiency. Bataineh and Mayyas (2014) compared blended learning contexts with traditional learning classes and concluded that the group instructed through the blended teaching strategy outperformed the traditional teaching group in reading skills and grammatical knowledge.

Soltani et al. (2012) compared the effects of blended and traditional classes on EFL students' vocabulary improvement and found that learners in the blended classes performed better. Wang (2021) investigated the impact of teaching English conversation through a blended class and found that the blended teaching approach had a positive effect on improving students' English conversation performance. Blended teaching of writing was also found to encourage EFL students to participate more and engage in social interactions with peers and teachers in collaborative learning (Yang, 2014).

Despite the wealth of research on flipped and blended teaching strategies, few studies have directly compared their effects on language learning, particularly in relation to writing skills. Furthermore, previous research has often focused on general writing skills without considering specific criteria, features, and characteristics. Therefore, to address these gaps and overcome the limitations of existing studies, this research aims to evaluate and compare the effects of teaching cohesive devices in paragraph writing using flipped and blended teaching strategies.

2.3. Theoretical Framework

Several theories of SL/FL provide valuable insights into the underlying mechanisms and pedagogical implications of flipped and blended teaching strategies. For instance, Krashen's Input Hypothesis (Krashen, 1985) posits that comprehensible input plays a crucial role in language learning. In the context of flipped and blended learning, exposure to pre-recorded instructional materials and online resources can provide learners with comprehensible input that is slightly beyond their current level of competence. This exposure can enhance their understanding and acquisition of cohesive devices in paragraph writing.

Vygotsky's Sociocultural Theory (Vygotsky, 1978) highlights the significance of social interactions and collaborative learning in language development. Flipped and blended learning environments offer opportunities for learners to engage in collaborative activities, such as discussions and peer feedback, which facilitate their understanding and use of cohesive devices. The social interactions and support from peers and instructors create a supportive learning environment where learners actively construct knowledge and develop their writing skills.

2.3.3. Cognitive Load Theory

The Cognitive Load Theory (Sweller, 1988) sheds light on the effectiveness of flipped and blended learning approaches. This theory suggests that instructional designs should aim to reduce extraneous cognitive load while promoting intrinsic and germane cognitive load. Flipped and blended learning models, with their self-paced learning, multimedia resources, and interactive activities, optimize cognitive load management by providing learners with meaningful and engaging learning experiences.

3. Method

3.1. Design

Due to the lack of access to the entire population for random sampling, convenience sampling was used to select the population for this study, making it a quasi-experimental study. The independent variables were the flipped and blended teaching strategies (class), while the dependent variable was the learners' use of cohesive devices in paragraph writing.

3.2. Participants

Using convenience sampling, 100 junior EFL language learners studying English Translation at Payame Noor University were selected as participants. The learners were grouped together based on their performance results from the Oxford Placement Test (OPT), ensuring that they were homogenized before the study. The final sample consisted of 90 intermediate EFL learners who achieved a band score of 30 to 45 on the OPT. The age range of the participants ranged from 18 to 24 years. They were divided randomly into three groups of 30 participants each, including two comparative groups and one control group.

3.3. Instruments

3.3.1. OPT

The OPT was utilized to assess the English proficiency level of the participants. It consisted of two parts: language use and listening. The language use section included 40 items to evaluate vocabulary and grammar knowledge, while the listening section assessed learners' listening skills.

3.3.2. Instructional Material

The instructional material for this study was derived from the book "Paragraph Writing" (Hemmati & Khodabandeh, 2017). The researchers developed instructional cards and video tracks focusing on cohesive devices, such as pronouns, repetition of keywords, definite articles, use of synonyms, and transitional phrases. The instructional content and examples for each cohesive device were copied onto separate cards from the cited book. Native-like speakers were involved in recording and developing the instructional video tracks.

3.3.3. Writing Pre- and Posttests

Prior to the treatment sessions, the participants were requested to write a pretest paragraph. After completing the treatment sessions, they participated in the posttest by writing another paragraph. Both the pre- and posttests required writing cause and effect paragraphs, but different topics were selected for each test to minimize the test effect. The pretest topic focused on the effect of mass media on human life, while the posttest topic addressed the causes of air pollution. The paragraphs were scored out of 20 based on the accurate and correct use of cohesive devices. Two EFL raters scored the papers, and their results are presented in the Results section.

3.3.4. WhatsApp

For the flipped and blended groups, separate online groups were created on WhatsApp. This social networking platform allowed the instructor and participants to exchange paragraphs, audio

files, and instructional videos. WhatsApp has been recognized as a powerful tool for SL/FL language learning, facilitating practicality and increasing interaction among EFL learners, as confirmed by EFL researchers (e.g., Tragant et al., 2020).

3.4. Procedure

Before the first treatment session, participants in the flipped and blended groups were provided with an overview of how the classes would be conducted throughout the term. The entire treatment consisted of 18 sessions over a semester, with two sessions dedicated to administering the pre- and posttests. The remaining 16 treatment sessions were conducted twice a week, with each session having a duration of 90 minutes to focus on teaching one of the five predetermined cohesive devices: pronouns, repetition of keywords, definite articles, use of synonyms, and transitional phrases.

3.4.1. The Face-to-Face Group

The face-to-face group received the instructional material through traditional teaching methods in a traditional learning context, in person. The treatment sessions took place on Saturdays and Tuesdays. During the first treatment session, the participants were taught one type of paragraph and one cohesive device from the predetermined set. After the instructor provided explanations and examples of the cohesive device, the participants completed designated tasks, and the answers were reviewed in class under the instructor's supervision. At the end of each session, participants were required to review the instructional material at home and write a paragraph on the given topic, focusing on the cohesive device taught in the previous session. The subsequent treatment session involved reading and providing feedback on the participants' writings, with a specific emphasis on the accurate use of the cohesive device covered in the previous session.

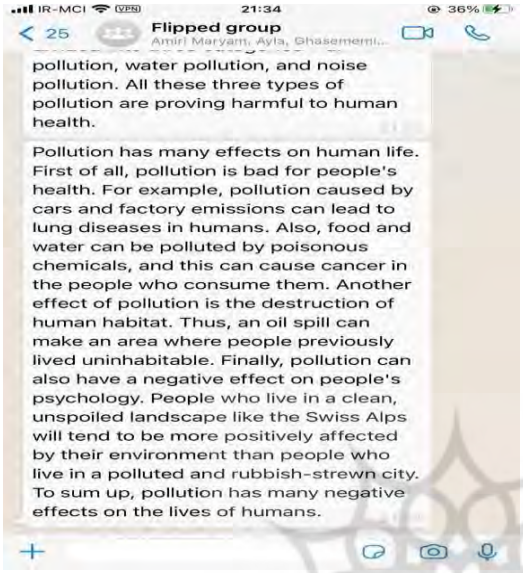
3.4.2. The Flipped Group

To facilitate the flipped learning experience, the instructor established a class on the WhatsApp platform and included the participants as members. Online sessions were scheduled for Sundays and Wednesdays. Two days before each online session, the instructor shared the instructional materials on WhatsApp. Participants read and studied the material independently and engaged in discussions within the group, sharing and exchanging ideas. In case of any questions, participants could ask and receive answers from their peers. After the presentation of the instructional material, participants completed shared tasks related to the targeted cohesive device. They collaborated and interacted with each other to share and review their answers. Participants were then instructed to review the instructional material at home and write a paragraph on the predetermined topic, utilizing the cohesive device they had learned. The participants shared their

writings on the WhatsApp group, allowing their peers to read and provide comments during the second treatment session.

Figure 1

A Sample of One of The Participants' Paragraphs Within the Flipped Group



3.4.3. The Blended Group

In the blended group, participants engaged in both the WhatsApp group and face-to-face classes. To accommodate the blended learning approach, the instructor created an additional group on WhatsApp and added the participants to it. Treatment sessions for the blended group were scheduled to take place on Mondays and Thursdays, specifically from 4:00 to 6:00 p.m. The WhatsApp group served as the online learning platform for this group.

When participants were online on WhatsApp, they received the instructional material from the instructor. After sharing the material, the instructor conducted the face-to-face class, focusing on paragraph writing and cohesive devices. Participants received explanations and examples and then completed designated tasks during the face-to-face session. The answers to the tasks were reviewed in class under the instructor's guidance.

At the end of each session, participants were required to review the instructional material at home and write a paragraph on the predetermined topic. They were instructed to share their writings on the WhatsApp group before the second face-to-face session. During the second treatment session, conducted online, the participants' writings were reviewed, and their instructor and their peers provided feedback and comments on their paragraphs as part of the learning process.

4. Results

The collected data in this study were analyzed using one-way analysis of covariance (one-way ANCOVA).To assess the normality of the data, the Skewness and Kurtosis formula was utilized. The results indicated that the absolute values of the ratios over the standard error of Skewness and Kurtosis were less than 1.96. Therefore, the assumption of data normality was satisfied.

Pearson correlations were computed to estimate the inter-rater reliability. The results demonstrated a significant agreement between the two EFL raters who assessed the participants' paragraphs in terms of cohesive device usage on both the writing pretest (r(88)=.764, p=.00) and posttest (r (88)=.799, p=.00).

The assumption of linearity was supported by the results presented in Table 1. The analysis (F (1,75)=191.10, p=.000, eta squared=.724) revealed a linear relationship between the dependent variable and the covariate.

Table 1

Test of Linearity

			Sum of Squares	Df	Mean Square	F	Sig.
Posttest* Pretest	Between Groups	(Combined)	1095	14	78.2	14.0	.000
		Linearity	1066	1	1066.3	191.1	.000
		Deviation from Linearity	28.7	13	2.21	.396	.967
	Within Groups		418.50	75	5.58		
	Total		1513.6	89			
	Eta-Squared		.72				

Table 2 indicates a non-significant interaction between the pretest of paragraph writing and the independent variable (F (2, 84)=2.54, p=.085, partial eta squared=.057).

Table 2

Test of Homogeneity of Regression Slopes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group	53.4	2	26.7	25.2	.000	.376
Pretest	1096.4	1	1096.4	1035.4	.000	.925
Group * Pretest	5.383	2	2.6	2.5	.085	.057
Error	88.9	84	1.0			
Total	17354.0	90				

ANCOVA presumes equality in the variances of the groups. As Table 3 shows, the assumption of homogeneity of variances was not retained (F (2, 87)=12.92, p=.000).

Table 3

Levene's Test of Equality of Error Variances

F	df1	df2	Sig.
12.927	2	87	.000

Table 4 displays the descriptive statistics of the posttest results. The blended group (M= 14.96, SE=.192) obtained the highest mean score, followed by the flipped group (M=14.35, SE= .191), and finally the control group (M=10.48, SE=.191).

Table 4

Descriptive Statistics of the Posttest

			95% Confidence Interval	
Group	Mean	Std. Error	Lower Bound	Upper Bound
Blended	14.962[a]	.192	14.581	15.343
Flipped	14.350[a]	.191	13.970	14.731
Control	10.488[a]	.191	10.107	10.868

According to Table 5, which presents the results of one-way ANCOVA, there are significant and noticeable differences between the three groups' means on the posttest after being controlled for the pretest effect. Table 5 also displays the significance of the covariate, i.e., the pretest. The significant F-value associated with the covariate acknowledged that the pretest had a significant role in this research.

Table 5

Tests of Between-Subjects Effects; Posttest

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Pretest	1091.069	1	1091.069	994.712	.000	.920
Group	352.917	2	176.459	160.875	.000	.789
Error	94.331	86	1.097			
Total	17354.000	90				

The significant results of one-way ANCOVA were followed by post-hoc comparison tests (Table 6) to examine the research questions raised in this study. Based on the results displayed in Table 5 and the post-hoc comparison tests presented in Table 6, it can be deduced that first, both flipped and blended learning classes outperformed the control group on the posttest of paragraph writing. Second, the flipped group (M=14.35) significantly performed better than the control group (M=10.48) on the posttest of cohesion after being controlled for the impact of the pretest (Mean Difference=3.86, p<=.01).

Table 6

Post-Hoc Comparisons Tests

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Blended	Flipped	.612	.271	.080	-.051	1.274
	Control	4.475*	.271	.000	3.813	5.136
Flipped	Control	3.863*	.271	.000	3.202	4.523

Furthermore, after accounting for the pretest scores, the blended group exhibited significantly higher performance on the posttest of cohesion compared to the control group (Mean Difference=4.47, p<=.01). However, there was no significant difference observed between the

blended learning context and the flipped learning context group on the posttest of cohesion, even after controlling for the pretest (M=.612, p>.01).

5. Discussion

The findings demonstrate that both the flipped learning context and the blended learning context had a notable and positive effect on enhancing the EFL participants' proficiency in accurately employing cohesive devices in paragraph writing. These findings align with previous studies conducted by Kvashnina and Martynko (2016), Alharabi (2015), Chen Hsieh et al. (2016), Hung (2015), Soltanpour and Valizadeh (2018), Ahmed (2016), and Ekmekci (2017) which reported similar positive impacts of flipped and blended learning on language learning outcomes.

Similarly, the evaluation of the blended learning context in improving EFL learners' accurate use of cohesive devices showed significant improvement, consistent with the results of previous studies conducted by Ghazizadeh and Fatemipour (2017) and Soltani et al. (2012). The outcomes of this study, along with previous research studies (Soltanpour & Valizadeh, 2018; Ahmed, 2016; Ekmekci, 2017; Ghazizadeh & Fatemipour, 2017; Kvashnina & Martynko, 2016 Malmir & Khosravi, 2018), highlight the cooperative learning environment created by the flipped and blended learning contexts. In these contexts, learners actively engage with each other and their instructor, enhancing their learning experience. Cooperative learning has been shown to improve learning outcomes (Nguyen, 2017), and the learner-centered nature of flipped and blended teaching strategies requires high levels of learner activity and cooperation (Gilboy et al., 2015). The active participation and engagement of participants in this study's classes align with the benefits described by Ting Hung (2017) in flipped and blended learning environments.

Another contributing factor to the positive impact of flipped and blended learning contexts is their integration of recent advancements in educational technology (Ed-Tech). According to Stiller and Schworm (2019), learners' expectations are influenced by technological advancements, necessitating updates to traditional teaching methods for improved effectiveness. By utilizing Ed-Tech devices, the flipped and blended learning contexts in this study provided learners with a more effective and advantageous learning experience.

The prior knowledge created in participants' minds through pre-class materials in the blended group facilitated their understanding of the instructional material and review exercises during the face-to-face class. This activation of prior knowledge enhances learning quality, as explained by Yu and Zhu (2019).

In addition to the practical benefits of flipped and blended learning approaches, several theories of second language acquisition can help explain the positive effects observed in this study. One such theory is Krashen's Input Hypothesis (1985), which suggests that learners improve their language proficiency through exposure to comprehensible input. In the flipped and blended learning contexts, learners have increased access to a variety of input materials, such as online

resources and multimedia content, which can enhance their exposure to the target language. Furthermore, Vygotsky's sociocultural theory (1978) emphasizes the role of social interaction and collaborative learning in cognitive development. The cooperative learning environment fostered by the flipped and blended learning contexts encourages learners to interact with their peers and engage in meaningful discussions, promoting language acquisition and the development of higher-order thinking skills. The Cognitive Load Theory (Sweller, 1988) is also relevant to understanding the benefits of flipped and blended learning. This theory posits that learners' cognitive load should be managed effectively to optimize learning. In the flipped and blended learning approaches, pre-class materials and independent study tasks offload some of the cognitive load from the in-class sessions, allowing learners to focus on higher-level cognitive processes during face-to-face interactions and activities.

Overall, the findings align with previous research and are supported by relevant theories of SL. The positive impact of flipped and blended learning contexts on learners' accurate use of cohesive devices in paragraph writing can be attributed to the learner-centered approach, the integration of Ed-Tech, and the application of theories such as the Input Hypothesis, sociocultural theory, and Cognitive Load Theory. These findings provide valuable insights for language educators and curriculum designers seeking to enhance writing proficiency in EFL contexts.

6. Conclusion

In conclusion, both flipped and blended learning contexts significantly improved participants' use of cohesive devices in paragraph writing. These new learning contexts, driven by Ed-Tech advancements and the use of the Internet, help overcome the limitations of traditional learning approaches. By fostering active and cooperative learning, and transferring responsibility to learners, flipped and blended learning contexts promote autonomous language learning skills. The positive impact on academic achievement and cohesive device performance suggests that these contexts are effective alternatives to traditional learning approaches.

The findings of this research have important implications for self-directed learners, English teachers, material developers, and policymakers. Autonomous learners can benefit from finding suitable flipped materials aligned with their proficiency level. English teachers can reconsider the role of flipped and blended instruction in enhancing language skills. Material developers and policymakers gain insight into the importance of Ed-Tech devices and the creation of prior knowledge and schemata in learners' minds.

Further research studies are needed to confirm and expand upon the outcomes of this study. Suggestions for future studies include exploring the impact of flipped and blended learning on other writing features, different types of paragraph writing, and other language skills. Additionally, investigating the use of other types of Ed-Tech devices to create virtual learning environments for flipped and blended classes would be valuable.

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