

The Impact of a Practical Flipped Process-Genre Writing Model on Moroccan EFL High School Students' Writing Performance

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ABSTRACT

In Moroccan Secondary schools, writing presents cognitive and linguistic demands, which makes Moroccan students struggle with generating ideas, organizing texts, maintaining coherence and cohesion and applying grammatical conventions accurately. Among the prescribed tasks in the Second Baccalaureate syllabus is report writing. This genre is particularly challenging, as students need to produce a well-organized report on school events organized by educational authorities (e.g. seminars on pandemics, environmental issues, etc.). Although both the flipped classroom and the process-genre pedagogy have shown potential for enhancing students' writing performance, limited experimental studies have investigated the effectiveness of integrating the two approaches. Addressing this gap is crucial to identifying the effectiveness of this new flipped model. Therefore, this study aimed to investigate the impact of a flipped process-genre writing model on Moroccan EFL high school students' writing performance and to explore students' perceptions of the model. A quantitative quasi-experimental pretest-posttest design was employed over four weeks with four intact Grade 12 classes from Al Mansour Addahbi Secondary School in Sidi Kacem, Morocco. Two classes were assigned to the control group ($n = 78$), which received non-flipped instruction, and two classes to the experimental group ($n = 78$), which was taught using the flipped model. Data were collected through pretest-posttest assessments measuring students' performance in report writing and a 37-item five-point Likert-scale questionnaire exploring students' perceptions. Descriptive statistics, ANCOVA, reliability analysis, and Spearman's rank order correlations were used. The findings revealed that students in the experimental group significantly outperformed their control counterparts in report writing. Furthermore, most participants expressed positive perceptions of the flipped model. The findings suggest that this new flipped writing model is effective in enhancing EFL students' writing performance and promoting positive attitudes towards writing instruction. The study stresses the pedagogical value of incorporating the process-genre pedagogy into the flipped classroom and provides empirical evidence supporting its implementation in Moroccan secondary school EFL contexts.

Keywords-flipped classroom, process-genre pedagogy, EFL writing, quantitative research, Morocco

INTRODUCTION

In Moroccan high schools, writing is widely acknowledged as the most complex skill not only for educators to teach but also for students to master (Khartite et al., 2021; Elkhayma, 2020). Writing presents inherent cognitive and linguistic demands, even in a learner's first language, let alone in a second or foreign language like English. Writing in English as a Foreign Language (EFL) instruction poses pedagogical challenges, particularly within the Moroccan EFL context. The English textbooks are overloaded with instructional writing tasks that teachers are required to cover and assess within limited instructional timeframes. Consequently, higher order writing activities such as editing, revising, and publishing are frequently assigned as homework. The goal is to manage time constraints in the writing classroom. However, there are very few studies investigating the effectiveness of this strategy in producing the desired learning outcomes or helping students develop their writing skills.

For instance, Murillo and Martínez-Garrido (2012) pointed out that if there is no follow-up feedback after doing the homework assignments, their effectiveness drops significantly. Otherwise, students should be given delayed feedback and get their final product reviewed and corrected in the classroom, which is more time consuming and difficult to implement in real instructional conditions. Therefore, the traditional writing classroom becomes

more lecture-based and less learner-centered, which results in students frequently struggling with mastering different writing elements such as coherence and cohesion, organization, grammar and mechanics, and audience awareness. Therefore, innovating writing instruction within the Moroccan educational system is urgently required.

Additionally, there is a tendency in the literature to oversimplify traditional classroom instruction as passive and lecture-based, overlooking the diversity of teaching strategies that many instructors already incorporate into their lessons (Soltanpour & Valizadeh, 2018; Kvashnina & Martynko, 2016; Ekmekci, 2017; Alnuhayt, 2018; Alsowat, 2016). While research on flipped learning has revealed positive learning outcomes in most disciplines, including language education (El-Fatah & Ahmed, 2016; Basal, 2015; Evseeva & Solozhenko, 2015; Kheryadi et al., 2024), relatively few studies have focused on its application to writing instruction in EFL contexts. Even fewer have examined the integration of flipped writing classroom with the process-genre approach. This combination remains largely unexplored. Furthermore, students' perception of the flipped process-genre writing model remain under-researched in the Moroccan context.

Moreover, studies investigating the effectiveness of the flipped model in EFL writing classrooms, especially in the Moroccan context, remain scarce. The present study addresses several gaps. First, it investigates the effect of a practical Flipped Process-Genre Writing Model (FPGWM) on Moroccan EFL high school students' writing performance in report genre writing. Second, it explores students' perceptions to offer a comprehensive perspective on the pedagogical feasibility of this model in the Moroccan context. Moreover, there is an absence of a fixed standard flipped process-genre writing model that can be implemented consistently across studies to replicate and, hence, evaluate its validity and reliability and measure its effectiveness in EFL contexts. Most studies use a variety of instructional models, which results in inconsistent learning outcomes or perceptions. That is why, while several studies have reported significant gains in student performance and increased motivation, others have found minimal or inconsistent results (Ekmekci, 2007; Cabi, 2018; Smith et al., 2018). The adoption of different models makes it difficult to generalize the findings.

Therefore, the newly proposed flipped writing model is structured based on learning theories and frameworks that are evidenced in the literature to yield positive learning outcomes. It provides students with opportunities to watch interactive videos and complete interactive out-of-class activities, followed by collaborative writing tasks and personalized feedback during class, creating a learner-centered environment conducive to writing development. All these stages are organised following Bloom's revised taxonomy and process-genre pedagogy, seamlessly integrated within the flipped learning strategy.

Addressing these gaps in the present study may help researchers understand the pedagogical impact of the flipped process genre writing model and its practical implications for learners and teachers on the ground. Such research should not only measure students' writing performance outcomes, but also explore students' perceptions toward this new model, which may provide valuable insights for teachers, curriculum designers, and educational policymakers seeking to enhance the quality and effectiveness of writing instruction in Moroccan schools.

For this reason, drawing on the flipped process-genre writing model proposed by Eladraoui and Sakale (2025) that focuses on genres writing, the current study aimed to investigate its impact on students' writing performance and explore EFL students' perceptions. To this end, the present study addresses two research questions:

1. Does the implementation of a practical flipped process-genre model (FPGWM) have a positive impact on the writing performance of Moroccan EFL high school compared with the non-flipped process-genre writing model (NFPGWM)?
2. How do Moroccan EFL high school students perceive the flipped process-genre writing model in terms of Pre-Class Activities, Flipped Interactive Videos, In-Class Activities, and Flipped Classroom Technologies?

LITERATURE REVIEW

Writing Instruction in EFL Contexts

Writing in EFL contexts is a cognitively demanding process that can cause frustration and difficulty for EFL learners. Most EFL students perceive writing as a challenging skill as they have to manage multiple dimensions

simultaneously such as vocabulary, grammar and mechanics, coherence and cohesion (Fareed et al., 2016; O'Flaherty and Phillips, 2015). Traditional approaches to writing instruction often emphasize accuracy and the final written product, with limited attention to the process writing. Students receive information through lecturing and then they do the writing tasks at home s (Herreid and Schiller, 2013), which minimizes the role of social interaction in meaning-making. As a result, students frequently experience writing as a mechanical and demotivating task rather than a meaningful communicative activity. These limitations have prompted the exploration of alternative pedagogical approaches that support both the process and the social dimensions of writing.

The Process-Genre Approach

Because of the limitations and lack of evidence of the product, the process and the genre approaches to yield positive learning outcomes in writing, many researchers opted for a new model called process-genre writing, which is a synthesis of both process approach and genre-based pedagogy (Hyland, 2007; Badger & White, 2000; Feez, 1999). In the process-genre approach, students can use the process writing skills such as prewriting, drafting, revising, editing, collaboration together with their understanding of text features, social context and the purpose of the genre to produce good quality writing (Badge & White, 2000). Therefore, integrating brainstorming, drafting, reviewing, editing, proofreading and publishing, which are key elements in the process writing approach with an understanding the purpose, audience and context, important components of the genre-based approach, can promote students' writing skills and improve their writing proficiency (Eliwarti & Maarof, 2016; Kitajroonchai et al., 2022; Gupitasari, 2013; Truong, 2022).

Students' Writing Performance

Empirical studies consistently report positive effects of the process-genre approach on students' writing performance across various contexts. Improvements have been observed in content development, organization, vocabulary use, and grammatical accuracy, suggesting that the integration of process and genre knowledge supports more effective writing development.

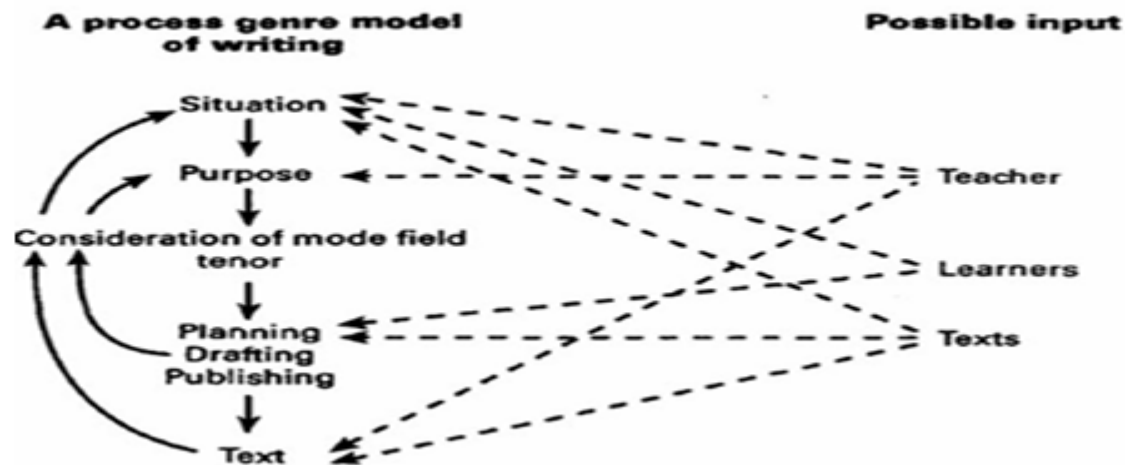
Several studies have examined the effects of the process-genre approach on students' writing quality (Eliwarti & Maarof, 2016; Kitajroonchai et al., 2022; Gupitasari, 2013; Truong, 2022). For instance, in Lan and Anh's (2022) action research study on 34 ESL students (aged 17) who had studied English for 8 years, the findings derived from the pre-test and post-test scores depicted that genre-based pedagogy enhanced students' 23 writing skills and assisted them in producing good expository essays. The study also revealed improvement in four aspects of writing: mechanics (punctuation, spelling, and capitalisation), content, organisation (essay structure, supporting ideas, etc) and language (sentence structures, vocabulary items, etc) (Lan & Anh, 2022). Similarly, Tuyen et al. (2016) conducted a quasi-experimental study investigating the effects of using process genre pedagogy to teach writing in an ESL classroom in Vietnam. The results of the study indicated that process-genre pedagogy was beneficial to students and increased their scores on content, organization, vocabulary and grammar (Tuyen et al., 2016). Specifically, students in the experimental group performed significantly better than those in the control group. These findings are in line with the study of Elwarti and Maarof (2017), which examined the impact of process-genre approach on EFL students' writing achievement. The experiment was conducted on 67 undergraduate students studying at an Indonesian university. The post test results of the study indicated that students taught through the process genre approach scored higher in the writing aspects such as "format and content, organization and coherence, and sentence construction and vocabulary" than students who were taught using the product traditional approach (Elwarti & Maarof, 2017). As can be noticed, the previous reviewed studies on the process genre approach provide ample evidence of the positive effects of the process genre pedagogy on students' overall writing ability and performance at both secondary and university levels (Eliwarti & Maarof, 2016; Ajmal et al., 2022; Kitajroonchai et al., 2022; Gupitasari, 2013; Truong, 2022). There are three main models of the process genre pedagogy previous studies have adopted and adapted to teach students' writing effectively.

Process-Genre Models

Two influential models illustrate this approach. Badger and White's model conceptualises writing as an interaction between context, process, and input, emphasizing the role of scaffolding and multiple sources of

support (see figure 1). In contrast, Yan's revised model operationalizes these principles into structured instructional stages, including preparation, modeling, joint construction, independent writing, and revision (see Figure 2). While the former provides a theoretical framework, the latter offers practical classroom implementation.

Figure 1 Badger and White's Process-Genre Approach (Badger & White, 2000, p.159)



In contrast, Yan's revised model provides a pedagogical framework for teaching writing as it is built on a sequence of well-structured and organized stages such as preparation, modeling, joint construction, independent writing, and revision (see Figure 2). While the former provides a theoretical framework, the latter offers practical classroom implementation.

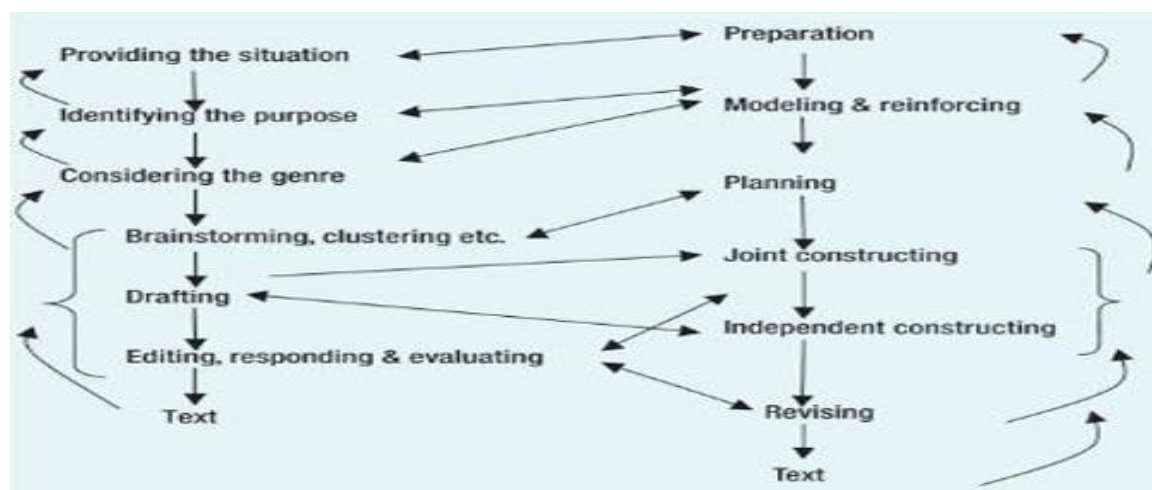


Figure 2 Yan's Revised Model of the Recursive Process-Genre Approach (Yan, 2005, p.25)

Despite its effectiveness, its implementation in traditional classrooms is often faced with time constraints, which limits opportunities for guided practice, feedback, and revision. Therefore, a new instructional strategy is needed to support the recursive and communicative nature of writing.

Flipped Learning in EFL Education

Flipped learning (FL) represents a shift from teacher-centered to learner-centered instruction by enabling the learner to study the content before class and during class time they are engaged in active learning (Bergman & Sams, 2012; Sengul et al., 2022). The most pertinent description of FL is the one provided by "Flipped learning Network (FLN)" (2014) that considers the FL as "a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter." In this model, students engage with instructional materials

independently before class and apply their knowledge through collaborative activities during class, which renders the learning process more learner centered as students work together and share their learning experience to maximise learning (Hao, 2016; Karimi & Hamzavi, 2017; Samaila et al., 2024 ; Tutancu & Aksu, 2018)

The theoretical foundations of flipped learning are closely aligned with constructivism. For instance, from a cognitive constructivist perspective, people create new meanings individually through building upon their past experiences (Piaget, 1953), while social constructivism holds that the construction of knowledge results from social interaction and collaboration (Vygotsky, 1978). Concepts such as the Zone of Proximal Development and scaffolding are particularly relevant, as they underscore the importance of guided support in skill development.

In the constructivist classroom, Amineh and Asl (2015) emphasised that teachers need to “consider what students know and allow their students to put their knowledge into practice” to help them become autonomous learners. Hence, students actively worked in groups and participated in the construction of knowledge to attain the learning objectives (Ekmekci, 2017; Sherralyn & Pudín, 2017; Sukerti, Rudiastari, & Susana, 2020; Putra, 2021). Similarly, Alnuhayt (2018) pointed out that “the flipped classroom is pedagogically convincing because it supports the principles of personalized- differentiated learning, student- centered instruction, and constructivism”. In line with this perspective, Samaila et al. (2024) found that integrating TPS (think, pair, share) strategy into the guided flipped learning model as part of in-class writing activities enhanced students engagement and resulted in better learning outcomes. Similarly, Subramaniam & Muniandy (2019) reported that experimental students taught through the flipped classroom demonstrated high levels of engagement.

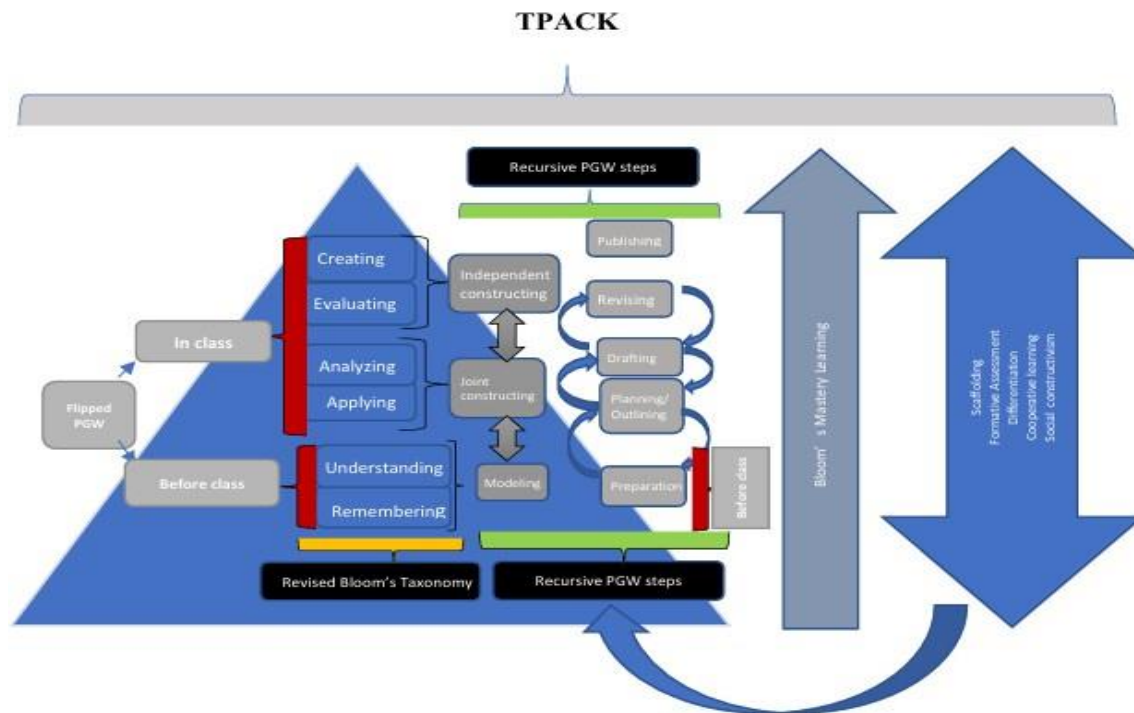
Integrating formative assessment into flipped classroom is crucial for enhancing student engagement and performance. Black and Wiliam (2009) argued that formative assessment is considered an essential component of classroom practice to get more evidence about students’ performance and progress. In the same vein, Bergmann and Sams (2012) proposed that teachers use technology in flipped learning classrooms to assess students’ learning progress to attain the learning objectives. Several empirical studies support this view. For instance, Onodipe and Ayadi (2020), in their study “Using smartphones for formative assessment in the flipped classroom”, found that the use of Socrative app as an assessment tool encouraged students to engage in the learning activities and increased their interactivity with the content. The findings also revealed that using smartphones for assessment purposes in the flipped classroom increased students’ discussion and yielded positive learning outcomes. Similarly, Evseeva and Solozhenko (2015) integrated technology using the Moodle platform to help students peer assess each other and monitor their understanding of the material while working on tasks together. The results of the survey depicted that students achieved better thanks to the assessment strategies and active learning activities that were implemented in the flipped learning environment. These studies confirm that effective use of different formative assessment tools in flipped classrooms can help the instructor identify students’ weaknesses and design an intervention to enhance students’ learning to achieve the learning goals.

Integrating Flipped Learning with the Process-Genre Approach

Despite the complementary nature of flipped learning and the process-genre approach, their integration has received limited attention in the literature. The flipped model has the potential to address key limitations of traditional process-genre instruction by reallocating instructional time and enhancing opportunities for practice and feedback.

In a flipped process-genre framework, lower-order activities such as exposure to model texts and genre analysis can be shifted to the pre-class phase, allowing classroom time to focus on higher-order processes such as drafting, collaboration, and revision. This alignment with Bloom’s taxonomy supports more effective use of instructional time and promotes deeper engagement with writing tasks. Therefore, the present study responds to this need by investigating the effectiveness of a Flipped Process-Genre Writing Model (FPGWM) in Moroccan secondary school context as proposed by Eladraoui and Sakale (2025) (see Figure 3)

Figure 3 The Conceptual Framework of a Flipped Process-Genre Writing Model



As can be noticed, the input students get outside the classroom is based on Revised Bloom's taxonomy, which included remembering and understanding as lower-order thinking skills (LOTS). The content is introduced to students via interactive videos and assignments on TopWorksheets website. After the pre-class activities that target the LOTS are done outside the classroom, the students with different learning abilities proceed to engage with the learning materials in class under the guidance of their instructor. Mastery learning can be considered an effective solution to these mixed-ability classes that are characterized by achievement gaps among learners (Alghasab, 2020; El Garras, 2021). Therefore, a student is required to reach a level of mastery or competence of a skill before progressing to learn a new skill or concept (Bloom, 1968). Also, some assessment tools should be designed to identify the gaps in students' understanding of the content and skills they have been introduced to outside the classroom.

This framework also highlights different types of knowledge that teachers should hold to enhance their teaching performance and improve students' learning outcomes. These include pedagogical content knowledge (PCK), technological content knowledge (TCK) and technological pedagogical knowledge (PTK) which are based on the TPACK framework (Koehler & Mishra, 2009; Shulman, 1986).

METHODOLOGY

Research Design

This study adopted a quasi-experimental pretest-posttest design supplemented by a descriptive survey design. Quantitative data from writing tests were collected and analyzed first to examine the effect of the intervention on students' writing performance. Additionally, questionnaire data were collected from the experimental group to explore participants' perceptions of a flipped process-genre writing model.

Context and Participants

The study was conducted at Al Mansour Eddahbi High School in Sidi Kacem, Morocco, during the second semester of the 2024–2025 academic year. The sample consisted of 156 twelfth grade EFL students (aged 17–19) from four intact classes.

Due to administrative constraints, convenience sampling was employed. Two classes were randomly assigned to the experimental group ($n = 78$), and two to the control group ($n = 78$). To ensure instructional consistency, the same teacher (the researcher) taught both groups.

Ethical approval was obtained from the school administration, and participants provided informed consent. Participation was voluntary, and confidentiality was ensured.

Instructional Design

The intervention was carried out in the second semester of the 2024-2025 academic year over a period of four weeks, with both groups receiving one hour writing session per week, and targeted one writing genre: report genre writing, selected from the national textbook, “Ticket 2 To English”. The design was based on the flipped process-genre writing model proposed by Eladraoui and Sakale (2025) (see Figure 3).

Flipped Process-Genre Writing Model (FPGWM)

The experimental group was taught using a Flipped Process-Genre Writing Model (FPGWM):

- Pre-class phase:

- Students engaged with interactive instructional videos (10 minutes maximum) delivered via Edpuzzle. The videos incorporated embedded questions and immediate feedback to promote engagement and self-regulation.
- Supplementary interactive tasks (TopWorksheets) supported differentiation and practice.
- The teacher monitored student progress through Edpuzzle and TopWorksheets and provided targeted support when necessary.

The pre-class phase focused on lower-order cognitive processes in Bloom’s revised taxonomy, such as understanding report genre conventions, vocabulary, and text organization.

- In-class phase :

- Classroom time was dedicated to process-genre writing stages, including planning, drafting, joint construction, revision, and editing.
- Instruction emphasized formative assessment, collaborative writing, peer interaction, and teacher scaffolding.
- Formative assessment techniques were used to diagnose students writing needs and provide feedback and adjust instruction in real time (see Figure 3).

This instructional procedure followed the recursive process-genre writing cycle: preparation, modelling, joint construction, independent construction, revision and publishing.

Non-Flipped Process-Genre Writing

The control group received non-flipped process-genre writing instruction, in which content was introduced exclusively during class time. The principal distinction between the flipped and non-flipped process-genre writing conditions in this study was the inclusion of pre-class preparation in the flipped model. This design was intended to isolate the specific effect of flipped pre-class instruction, while keeping the comparable instructional practices across both groups. Unlike studies that compare flipped instruction with predominantly passive traditional classrooms, the present study ensured that both conditions remained interactive and pedagogically comparable, thereby strengthening the validity of the comparison.

Instruments

Two instruments were used to collect data:

- Writing Tests

Pretest and posttest report-genre writing tasks (see Table 1) assessed students' writing performance in using an analytic genre-specific rubric that evaluated four elements, content development, organization, coherence and cohesion, and grammar and mechanics. To ensure reliability, written texts were scored independently by two raters, and final scores were averaged. The test time was 35 minutes that was determined after piloting the writing pre-tests and post-tests.

Table 1 Description of the Pretest and Posttest Report Writing Tasks

Writing task	Prompt question
Report writing (pretest)	Write a report based on the chart given. Your school organized an event on the dangers of sharing personal information online. The chart includes organisers, topic, date, place, participants, attendance, activities, main ideas, and evaluation. Your task is to transform this information into a coherent text of 150–200 words , following the conventions of report-genre writing (introduction, body, conclusion)
Report writing (posttest)	Write a report based on the chart given. Your school organized an even on the benefits of volunteering for high school students. The chart includes organisers, topic, date, place, participants, attendance, activities, main ideas, and evaluation. Your task is to transform this information into a coherent text of 150–200 words , following the conventions of report-genre writing (introduction, body, conclusion)

Analytic Scoring Rubric Development

The researcher developed an analytic scoring rubric to achieve an objective evaluation of students' writing performance. The rubric showed the criteria used to measure students' performance such as Content development, Coherence and Cohesion, Organization and Grammar and Mechanics for report genre writing. Two ELT supervisors participated in validating the descriptors and verifying their relevance to the writing tasks.

- Survey Questionnaire

The closed-ended questionnaire aimed at exploring experimental groups students' perceptions of the flipped writing classroom model (n=78). It was administered after the intervention to gain insight into students' experiences with different components of the flipped process-genre writing model. The questionnaire consisted of 37 items grouped under four main constructs: Pre-Class Writing Activities (5 items), Flipped Interactive Videos (9 items), In-Class Writing Activities (14 items), and Flipped Classroom Technologies (11 items). Content validity was ensured through expert review in terms of clarity, relevance, and alignment with the study's objectives. Based on their feedback, modifications were made to improve wording, remove ambiguity, and ensure contextual suitability for Moroccan EFL learners. Internal consistency reliability for the four constructs were analyzed using Cronbach's alpha, with values of .70 or higher considered acceptable (Cohen et al., 2007).

Pilot study

Prior to the main study, the two instruments were piloted with 30 twelfth-grade EFL students over three weeks. The pre-post writing tasks were used to produce a report genre text and the survey questionnaire to measure students' perceptions of the FPGWM. Expert review confirmed content validity and Cronbach's alpha values (.91-.96) indicated strong internal consistency. Minor revisions were made before full implementation.

Data Analysis

Quantitative data

Pre-Posttest Scores

Quantitative data from pretest and posttest scores were analyzed using IBM SPSS Statistics version 20. Descriptive statistics, including means and standard deviations, were computed to summarize students' performance across four writing components, content, coherence and cohesion, organization, and grammar and mechanics, as well as the overall writing scores for both groups.

To determine the effect of the intervention on writing performance, a one-way analysis of covariance (ANCOVA) was conducted. This procedure was selected to adjust posttest scores by statistically controlling for baseline differences between groups. In the present study, the independent variable was the flipped process-genre writing model (FPGWM) and the non-flipped process-genre writing model (NFPGWM), the dependent variables were the posttest writing scores, whereas the corresponding pretest scores were treated as covariates.

Prior to running the ANCOVA, three main assumptions were examined: These included homogeneity of regression slopes, linearity, and homogeneity of variances.

Survey Questionnaire

After collecting data from the 78 participants, IBM SPSS Statistics 20 and Microsoft Excel were employed to provide a descriptive analysis of the participants' responses to the 37 questionnaire items that were classified into four constructs: Students' Perceptions of Pre-Class Writing Activities, Students' Perceptions of Using Flipped Interactive Videos as a Learning Tool, Students' Perceptions of In-Class Writing Activities (ICA), and Students' Perceptions of Using Flipped Classroom Technologies.

Given the ordinal nature of the Likert scale questionnaire items, item-level descriptive statistics were utilised. These included frequencies, percentages, medians, modes, and interquartile ranges (IQRs) to students' perceptions across the four constructs. In addition, Cronbach's alpha reliability coefficients were computed to assess the internal consistency of each construct. Spearman's rank-order correlation analysis was also conducted to explore the relationships among the four constructs.

RESULTS

Writing Performance

Descriptive Statistics

As shown in Table 2, both groups improved from pretest to posttest across all four writing elements. The experimental group consistently achieved higher posttest means, particularly in Content development ($M = 3.72$, $SD = .48$) and Coherence & Cohesion ($M = 3.41$, $SD = .54$), compared to the control group ($M = 3.25$, $SD = .55$; $M = 3.20$, $SD = .51$). Gains in Grammar & Mechanics were also stronger in the experimental group ($M = 3.38$, $SD = .50$) relative to the control group ($M = 3.10$, $SD = .49$). Improvements in Organisation were significantly in favour of the experimental group ($M = 3.38$, $SD = .57$) compared to the control group ($M = 3.40$, $SD = .53$). The total scores demonstrated that the experimental group ($M = 13.91$, $SD = 1.31$) outperformed the control group ($M = 12.73$, $SD = 1.30$), which indicates the flipped process-genre model had positive impact on students' performance in report genre writing.

Table 2 Descriptive Statistics for Pretest and Posttest Scores for Report Genre Writing

Writing element	Group	Pretest M(SD)	Posttest M(SD)
Content development	Control	2.05 (.55)	3.25 (.55)

	Experimental	2.14 (.52)	3.72 (.48)
Organisation	Control	2.03 (.58)	3.18 (.53)
	Experimental	2.11 (.50)	3.40 (.57)
Coherence & Cohesion	Control	2.12 (.52)	3.20 (.51)
	Experimental	1.98 (.50)	3.41 (.54)
Grammar & Mechanics	Control	1.99 (.51)	3.10 (.49)
	Experimental	1.97 (.52)	3.38 (.50)
Total scores	Control	8.19 (1.64)	12.73 (1.30)
	Experimental	8.20 (1.47)	13.91 (1.31)

Assumption Checks

Normality was assessed through visual inspection of both histograms and Q-Q plots and statistical tests such as the Shapiro-Wilk and Kolmogorov-Smirnov tests. All p-values exceeded .05, confirming approximate normality.

Moreover, the assumptions for ANCOVA were satisfied. The homogeneity of regression slopes ($p > .05$), linearity between covariates and dependent variables, and equality of error variances (Levene's test, $p > .05$) were met. These results validated the use of ANCOVA for the present dataset.

ANCOVA Results

Table 3 presents the ANCOVA results for posttest scores after controlling for pretest performance. The flipped classroom group significantly outperformed the control group in Content ($F(1,153) = 37.65$, $p < .001$, $\eta^2 = .19$), Organisation ($F(1,153) = 10.24$, $p = .002$, $\eta^2 = .06$), Coherence and Cohesion ($F(1,153) = 15.12$, $p < .001$, $\eta^2 = .09$), Grammar and Mechanics ($F(1,153) = 13.45$, $p < .001$, $\eta^2 = .08$), and the Total score ($F(1,153) = 48.10$, $p < .001$, $\eta^2 = .24$). These findings are statistically significant and consistently favour the experimental group. In general, the ANCOVA results showed that the flipped process-genre model enhanced the writing quality of the experimental group across all measured elements.

Table 3 Summary of ANCOVA Results for Writing Elements

Writing element	F(1,153)	P-Value	Partial η^2	Exp.Adjusted mean	Control.Adjusted mean	Mean difference
Content	36.82	0.001	.19	3.72	3.25	0.47
Organisation	10.24	0.002	.06	3.40	3.18	0.22
Coherence & Cohesion	15.12	0.001	.09	3.41	3.20	0.21
Grammar & Mechanics	13.45	0.001	.08	3.38	3.10	0.28
Total score	48.10	0.001	.24	13.91	12.73	1.18

Results of Questionnaire Analysis

Descriptive Statistics of Questionnaire Constructs

The frequency distribution revealed consistently positive perceptions across all four constructs of the flipped process-genre writing classroom model. As shown in Tables 4 and 5, the majority of responses clustered in the Agree and Strongly Agree categories, with minimal disagreement and relatively few neutral responses. For instance, Pre-Class Activities (PCA) showed the highest combined positive responses with 85.7% of the participants agreed and strongly agreed. Similarly, Flipped Interactive Videos (FIV) showed 85.8% positive responses, which indicates favourable perceptions towards the use of interactive videos as a learning tool. In-Class Activities (ICA) also received highly positive responses with 78.6% of respondents either agreed or strongly agreed, which reflects their satisfaction with the collaborative and interactive tasks in class. Likewise, Flipped Classroom Technologies (FCT) demonstrated highly positive perceptions with 86.3% of participants agreed and strongly agreed that the technology used in the flipped writing classroom was effective, useful, and easy to access.⁶

These results reveal that there is strong positive agreement in respondents' perceptions towards the four constructs.

Table 4 Frequency and Percentage Distributions Across the Four Constructs

Response Category	PCA (n=392)	FIV (n=619)	ICA (n=537)	FCT (n=600)
Strongly Disagree (1)	6 (3.1%)	9 (2.9%)	14 (2.6%)	6 (2.0%)
Disagree (2)	18 (9.2%)	43 (13.9%)	36 (6.7%)	39 (13.0%)
Neutral (3)	32 (16.3%)	36 (11.6%)	65 (12.1%)	37 (12.3%)
Agree (4)	176 (44.9%)	338 (54.6%)	386 (71.9%)	290 (48.3%)
Strongly Agree (5)	160 (40.8%)	193 (17.0%)	36 (6.7%)	228 (24.4%)
Total	392 (100%)	619 (100%)	537 (100%)	600 (100%)

Note. n = number of valid responses per construct.

Construct-Level Descriptive Statistics

Table 5 presents the construct-level means and standard deviations for the four questionnaire constructs. Mean scores ranged from 4.40 and 4.44, indicating high levels of agreement across all constructs of the flipped process-genre writing model. The relatively small standard deviation values (.20 -.23) suggest limited variability and a strong degree of consistency in participants' responses.

Table 5 Mean and Standard Deviation For Each Construct

Construct	Mean	SD
Pre-Class Activities (PCA)	4.40	0.20
Flipped Interactive Videos (FIV)	4.42	0.23
In-Class Activities (ICA)	4.41	0.22
Flipped Classroom Technologies (FCT)	4.44	0.21

Reliability Analysis

The internal consistency of the questionnaire constructs was assessed using Cronbach's alpha (see Table 6). As shown in Table 6, all alpha values ranged between .90 and .96. These results demonstrated excellent internal consistency reliability: Pre-Class Activities ($\alpha = .90$), Flipped Interactive Videos ($\alpha = .95$), In-Class Activities ($\alpha = .96$), and Flipped Classroom Technologies ($\alpha = .95$). These results confirm that the instrument reliably measured students' perceptions across the four constructs of the flipped process-genre writing model.

Table 6 Reliability Analysis of the Four Constructs

Construct	Cronbach's Alpha	Interpretation
PCA	0.90	Excellent
FIV	0.95	Excellent
ICA	0.96	Excellent
FCT	0.95	Excellent

Note. α = Cronbach's alpha. All constructs demonstrated excellent internal consistency reliability.

Correlation Analysis

Spearman's rank-order correlations were computed to examine the relationships among the four constructs of the flipped process-genre writing classroom model (Table 7). All correlation coefficients were positive and statistically significant ($p < .001$), ranging from .25 to .45, indicating moderate positive associations among the constructs.

The strongest associations were observed between Pre-Class Activities (PCA) and In-Class Activities (ICA) ($\rho = .45$), and between Flipped Interactive Videos (FIV) and In-Class Activities (ICA) ($\rho = .43$). Moderate correlations were also depicted between FIV and Flipped Classroom Technologies (FCT) ($\rho = .26$), and between PCA and FIV ($\rho = .25$). These results indicate that students who held positive views toward one construct (e.g., pre-class preparation) also tended to value other related constructs. These positive correlations among the four constructs demonstrate that students' perceptions of the flipped writing classroom model are generally coherent.

Table 7 Spearman's Rank-Order Correlation Matrix for Flipped Writing Classroom Constructs

Construct	PCA	FIV	ICA	FCT
PCA	1.00	0.25	0.43	0.38
FIV	0.25	1.00	0.43	0.26
ICA	0.45	0.43	1.00	0.40
FCT	0.38	0.26	0.40	1.00

Note. All correlations were positive and statistically significant ($p < .001$).

DISCUSSION

Writing performance

RQ1: Does the implementation of a practical flipped process-genre model (FPGWM) have a positive impact on the writing performance of Moroccan EFL high school compared with the non-flipped process-genre writing model (NFPGWM)?

Overall Effectiveness of the Flipped Writing Classroom Model

The findings of this study provide strong empirical evidence that the flipped process-genre writing model had a significant positive impact on students' overall writing performance. The ANCOVA results revealed a statistically meaningful difference between the experimental and control groups in Total posttest scores, with a large effect size ($\eta^2 = .23$). This indicates that the FPGWM was not only effective but also educationally meaningful in improving students' writing proficiency.

From a theoretical standpoint, this finding can be explained through the principles of constructivist learning theory, particularly social constructivism, which emphasizes active knowledge construction through interaction and collaboration (Amineh & Asl, 2015). In the flipped process-genre classroom, students engage with instructional content before class and use in-class time for guided practice, peer interaction, and teacher feedback. This shift from passive reception to active engagement likely facilitated deeper processing of writing skills.

Additionally, the results align with Bloom's revised taxonomy, where lower-order cognitive tasks (e.g., remembering and understanding) are moved outside the classroom, allowing in-class time to focus on higher-order skills such as applying, analyzing, and creating. Writing, as a complex productive skill, benefits significantly from such higher-order engagement, which explains the superior performance of the experimental group.

Differential Impact Across Writing Elements

While several previous experimental research studies provided evidence of the effectiveness of the flipped learning strategy in enhancing students' writing performance (Sukerti, Rudiastari, & Susana, 2020; Putra, 2021; Ekmekci, 2017; Abdelrahman, DeWitt, Alias, & Abdul Rahman, 2017), this study provides more details regarding students' improvement in different writing elements using analytic rubrics for accurate assessment. The findings suggest that the flipped process-genre model improved the majority of writing elements. However, the magnitude of its impact varied across components. This variation provides important insights into how different aspects of writing respond to this instructional innovation. These positive results align with El-Fatah and Ahmed's study (2016), which found that experimental group students taught using the flipped learning approach improved their writing skills, particularly in content, organization, cohesion, sentence structure, and lexical conventions. This is consistent with the findings of Leis et al. (2015), who illustrated that the flipped classroom strategy increased students' quality of writing and the quantity of words used to develop their content. The positive impact of flipped learning on improving students' writing skills is also in accordance with Kheryadi, Suseno, and Lustyantje (2024)'s study, which showed significant improvement in grammar, content development and sentence meaning. Students' high performance in each writing element can be attributed to the way this instructional model was implemented.

Content Development. The strongest effect of the flipped model was observed in content development, with a moderate and statistically significant group effect ($\eta^2 = .19$). This suggests that the FPGWM was particularly effective in enhancing students' ability to generate, elaborate, and support ideas.

This can be interpreted through the lens of the process-genre approach, which emphasizes idea generation, drafting, and revising within meaningful contexts. The FPGWM likely reinforced this approach by giving students more time to explore content before class and refine it during collaborative classroom activities.

Coherence and Cohesion. The flipped process-genre writing model demonstrated a moderate effect on Coherence and Cohesion ($\eta^2 = .088$). This meaningful effect was clearly reflected in students' ability to produce logically connected and cohesive writing. Additionally, the adjusted mean scores indicated that the experimental group (Adjusted M = 3.393) outperformed the control group (Adjusted M = 3.117). These results highlight the pedagogical value of this flipped model in fostering Coherence and Cohesion in students' written work. This improvement can be explained by the in-class writing activities that put the learners at the center of the learning process. Students were supported in their zone of proximal development and benefited from scaffolding provided by the Knowledgeable other (teacher or peers) (Vygotsky, 1978), which helped them grasp report writing

conventions such as paragraph structure (topic sentence, supporting details, concluding sentences, and cohesive devices). Additionally, the interactive nature of the flipped process-genre writing classroom created opportunities for negotiation of meaning and immediate feedback, both of which are critical for developing Coherence and Cohesion.

Grammar and Mechanics. The results showed a statistically significant but smaller effect of the flipped process-genre model on Grammar and Mechanics. Students' improvement in Grammar and Mechanics was not as significant as in Content and Coherence and Cohesion writing elements as the effect of the FPGWM was small ($\eta^2 = .077$),

This finding shows that lower-order writing skills such as Grammar and Mechanics should not be ignored in the flipped writing classroom and hence require repeated practice and explicit instruction for students to master them over time. Focusing on higher-order writing skills in the flipped process-genre writing model may not provide sufficient focused attention on form unless explicitly integrated into instructional design.

Organisation. The effect of the flipped process-genre classroom on Organisation was not statistically significant ($\eta^2 = .023$, $p = .061$) despite slight improvements in mean scores.

This finding requires careful interpretation. This means that the flipped model alone may not be sufficient to develop the Organisational writing element skills unless accompanied by structured scaffolding, such as graphic organizers, outlines, and explicit teaching of text organisation. This indicates that while the FPGWM may promote active learning, its effectiveness depends heavily on how instructional content is designed and implemented. The instructional design should be well-balanced in terms of targeting all the writing elements.

Students' Perceptions of the FPGWM

RQ2: How do Moroccan EFL high school students perceive this flipped process-genre writing model in terms of Pre-Class Activities, Flipped Interactive Videos, In-Class Activities, and Flipped Classroom Technologies?

The questionnaire findings revealed consistently high mean scores (4.40 - 4.44) across all

constructs, indicating strong student endorsement of the flipped process-genre writing model.

Pre-Class Activities

Students' perceptions of pre-class writing activities were investigated using 5 items. The findings revealed that students responded positively and most of them considered the activities engaging. For instance, the majority of students agreed and strongly agreed that the pre-class writing activities enhanced their understanding of different writing genres (item 1, 44.9% agreed and 41% strongly agreed), increased their confidence to be an active learner in class (item 3, 50% agreed and 35.9 strongly agreed), and made them devote more time and effort to writing (item 5, 44.9% agreed and 41% strongly agreed). Moreover, most participants found these pre-class activities varied and engaging (item 2, 35.9 % agreed and 50 % strongly agreed) as well as easy to understand (item 4, 50 % agreed and 35.9 strongly agreed). These findings are consistent with Basal's study (2015), which found that students benefited from the videos that presented the content. Their satisfaction with the pre-recorded videos was due to the opportunity they had to view and review the content multiple times until they fully understood it. Similarly, Zainuddin and Attaran's study (2016) showed that students considered 282 pre-class activity (the videos) as an advantage because they were able to learn at their own pace. Moreover, Maharani et al. (2020) explored Undergraduate EFL students' perceptions toward flipped classroom. They found students liked the pre-class writing activities such as the videos and e-materials. These findings generally support the findings of the present study, in which most participants expressed a favourable view toward the pre-class writing activities that were easy to understand, varied and engaging, and increased their confidence to write better texts. However, the findings of Al-Harbi and Alshumaimeri's study (2016) contradict these results. Their study revealed that more than 50% of participants considered out-of-class tasks as a workload, which demotivated them from engaging actively in the learning process. These contradictory findings require more investigation to confirm whether the participants' reaction toward the pre-class writing activities are affected by academic pressure, learners' learning style, or the nature of the tasks assigned to students before coming to class.

In general, positive attitudes toward pre-class activities (PCA) suggest that students valued the preparatory phase of learning. This aligns with both self-regulated learning (SGL), and constructivism (activation of prior knowledge).

Students entered the classroom with a foundational understanding, allowing in-class time to be used more efficiently for higher-order tasks such as writing drafts, independent construction, editing, and collaboration.

Flipped Interactive Videos

The findings of the 9 items that investigated students' perceptions of using flipped interactive videos as a learning tool indicated that the majority of students held positive attitudes towards the video-recorded lessons. These findings are consistent with several research studies that investigated students' perceptions of the flipped videos. For instance, Mason et al. (2013) found that the use of videos in the flipped learning environment was highly appreciated by students. The fact that students can view the videos multiple times at their own pace outside the classroom gave them chance to deepen their understanding through using class time for more interaction with the teacher and their peers (Ali et al., 2017; Enfield, 2013; Love, Hodge, Grandegenett and Swift, 2013; Sams and Bergmann, 2007). The results of this study are also consistent with Zainuddin and Perera (2019)'s study entitled "Exploring students' competence, autonomy and relatedness in the flipped classroom pedagogical model". They found out that the flipped classroom videos enabled students to learn the material at their own pace and intrinsically motivated them to improve their mastery of knowledge. Likewise, Enfield (2013) and Huang and Hong (2016) found that flipped videos helped students feel more confident learning on their own and encouraged them to be autonomous learners. This supports students' reactions in this study to Items 2 and 4 that revealed participants' increased confidence in doing the tasks independently. In this study, students also expressed their satisfaction with the interactive videos (item 7) created by their own teacher as they aligned with their proficiency level. These results support the findings of Torkelson (2012), who reported that students preferred the videos created by their own teacher. Bergman and Sams (2012) emphasised the importance of producing videos that are useful and aligned with the learning goals in class. Therefore, selecting videos from external sources such as YouTube or other learning platforms may affect students' motivation and engagement with the material. Additionally, Bergman and Sams (2012) recommended using short videos to keep students focused. Ali et al. (2017) noted that students expressed a favourable view toward 10-minute videos created by their teacher, which increased their engagement and participation in and outside of class. These findings support experimental group students' positive perceptions of the flipped interactive videos designed to introduce different text types for more interaction and better understanding. In short, although most previous studies have emphasised the advantages of integrating videos in the flipped classroom and their effectiveness in enhancing students' learning (Ali et al., 2017; Basal, 2015 Bergman and Sams, 2012; Torkelson, 2012), the potential of interactive videos has not been largely explored. The interactive videos created on the Edpuzzle platform require students to respond to the embedded questions before proceeding, integrate automatic grading, and enable teachers to monitor their students' progress instantaneously. These features are crucial for enhancing engagement, providing immediate feedback and having positive impact on learning. Therefore, further studies should investigate the usefulness of incorporating interactive videos in the flipped writing classroom to verify its effectiveness and measure students' perceptions of their effect on motivation and performance.

Students' positive perceptions of flipped interactive videos (FIV) can be interpreted through Self-Regulated Learning. The ability to pause, rewind, and control the pace of learning enhances learners' autonomy, metacognitive awareness, and responsibility for learning.

Additionally, the high ratings for preparation and motivation suggest that pre-class videos effectively activated prior knowledge, which is a key mechanism in constructivism.

In-Class Writing Activities

Experimental group students seemed to view the in-class activities useful and relevant (item13, 44.9% agreed and 41% strongly agreed) and expressed strong satisfaction with these activities (item 14, 47.4% agreed and 38.5% strongly agreed). These positive opinions are in line with several previous studies. For instance, Ghufon & Nurdianingsih (2019) used a 5 Likert-scale survey questionnaire and focus groups to answer the question of

“how flipped teaching with CALL affects learner autonomy in EFL writing class”. They found that varied learning materials and tasks, and learner centred approaches in the class stimulated students to engage actively in the learning activities and achieve the writing learning goals set by the instructors. This is clearly reflected in students’ responses to item 1 “the in-class writing activities were varied and engaging”. Similarly, Santikarn and Wichadee (2018) noted that the flipped classroom helped students become more involved in classroom discussion and engaged in the learning activities. Another study by Maharani et al. (2020) found that students agreed on the effectiveness of the in-class writing activities in enhancing their performance, which supports the results of students’ responses to item 6 regarding the positive impact of the flipped writing classroom on their writing achievement. Overall, the results of students’ perceptions of in-class writing activities were mostly positive, which is consistent with most studies investigating students’ attitudes or perceptions of the activities that take place inside the classroom (Alghasab, 2020; El Garras, 2021; Ali et al., 2017; Ekmekci, 2017).

The strong positive perceptions of in-class activities (ICA) reflect the importance of interaction in learning. These findings are well explained by social constructivism, which emphasizes that knowledge is co-constructed through social interaction. Therefore, collaborative writing, peer feedback, and teacher scaffolding likely enhanced engagement, confidence, communication skills, and mastery of writing skills. This explains why ICA received some of the highest ratings among all constructs.

Flipped Classroom Technologies

Students’ responses to the 9 items were mostly positive. This suggests that students really enjoy using these flipped technologies in the writing classroom. For instance, most respondents agreed and strongly agreed that using flipped classroom technologies for their writing class activities gave them greater control over their work (item 1, 37.2% agreed and 48.7% strongly agreed) and made them enjoy practicing writing (item 2, 47.4% agreed and 38.5% strongly agreed). The majority of students agreed and strongly agreed that they knew how to use flipped classroom technologies to learn English (item 3, 37.2% agreed and 48.7% strongly agreed), preferred homework assignments that incorporate flipped classroom technologies over those that do not involve technology (item 4, 48.4% agreed and 37.2% strongly agreed), found these technologies useful in their writing class (item 5, 52.6% agreed and 33.3% strongly agreed). Moreover, a large percentage of students agreed and strongly agreed that using these flipped technologies was necessary to learn writing in English (item 6, 44.9% agreed and 41% strongly agreed), interacting with flipped classroom technologies was easy for them (item 6, 53.8% agreed and 32.1% strongly agreed), and using the Edpuzzle and TopWorksheets platforms did not take too much time (item 7, 50% agreed and 35.9% strongly agreed). These positive responses were further supported by item 9 in which 44.9% and 41% agreed and strongly agreed that they would continue using Edpuzzle and TopWorksheets platforms for practicing English writing.

These findings are consistent with a number of studies that investigated students’ perceptions toward the digital tools used in flipped learning. For example, Güvenç (2018) reported that more than half of the participants preferred learning the material through technology over using the traditional methods. This supports students’ positive responses to Item 4, which showed their preference for homework assignments that incorporate flipped classroom technologies over those that do not involve technology (48.4% agreed and 37.2% strongly agreed). Santikarn and Wichadee (2018) also found that students were satisfied with the digital tools used such as the Edmodo learning platform and the recorded videos. The participants confirmed their effectiveness in deepening their understanding of the content and encouraging discussion and interaction. These findings align with the current study’s results for items 2 and 9, in which students expressed their enjoyment with the flipped classroom technologies and their intention to continue using these platforms to improve their English writing quality. Likewise, the majority of students considered the use of these technologies easy to use and necessary for effective learning (items 4 and 6). These findings are similar to Al-Harbi and Alshumaimeri’s study (2016), which investigated students’ opinion on the use of the Edmodo platform and other online resources. They reported that most students found learning through these digital tools easy and useful. In short, although previous research studies used different technological tools to introduce content to students, most participants expressed satisfaction and acknowledged their effectiveness in enhancing their learning across different flipped classroom models (Al-Harbi and Alshumaimeri, 2016; Alpat and Görgülü, 2024; Santikarn and Wichadee, 2018).

In short, students' favourable perceptions of Flipped Classroom Technologies (FCT) indicate that the tools used (e.g., Edpuzzle, TopWorksheets) were perceived as user-friendly and beneficial. This indicates that technological tools, when pedagogically aligned, can create a stimulating flipped learning environment in terms of organizing and delivering the information in a structured manner that is consistent with the learner-centered pedagogy.

Integrated Interpretation of Findings

When combining performance and perception data, we find that improved performance outcomes (especially in Content, Coherence and Cohesion, Grammar and Mechanics, and total score) and strong positive student perceptions across all constructs converge, which supports the theoretical premise that learning effectiveness is maximized when cognitive, social, and motivational dimensions are aligned. The flipped writing process-genre writing model achieves this alignment by distributing cognitive load across pre-class and in-class phases, promoting active knowledge construction through collaboration and joint construction, facilitating social interaction between their peers and teacher, and enhancing learner autonomy through learning before class.

Implications

The findings provide strong empirical support for the integration of the flipped classroom with the process-genre approach. First, flipped process-genre instruction can create a more centred writing classroom environment by enabling students to collaborate, do more practice such as writing drafts, independent construction, joint construction, and editing), and receive feedback during classroom sessions. This allows students to participate actively in the writing process rather than passively receiving information.

Second, the model provided in this study is unique in that it expands TPACK theory and aligns it with the process-genre approach and flipped learning strategy. It demonstrates how flipped technologies function not only as content delivery tools, but also as pedagogical supports that enhance students' understanding of different types of writing while maintaining the pedagogical organization of the instructional content. Additionally, students' positive perceptions of flipped classroom technologies highlight the importance of using user-friendly digital platforms or applications that support interaction, accessibility, immediate feedback, and enhance learner autonomy. Effective technology integration should therefore be pedagogically driven rather than technology driven.

Furthermore, the statistically non-significant result for the Organisation writing element suggests that more explicit scaffolding is needed, longer intervention periods additional modelling of text structure, and explicit instruction on paragraph structure could be integrated into future implementations of the flipped process-genre model.

Overall, these findings confirm that the flipped process-genre writing model is both theoretically sound and empirically effective. As a result, it can serve a practical instructional guide for teachers and educators by providing a logical sequence of activities that combines the structure of the flipped classroom model with the stages of the process-genre writing approach to deliver writing instruction in an effective way.

RECOMMENDATIONS

Based on the findings of the current study, several recommendations can be proposed for teachers and future researchers:

First, flipped process-genre writing model should be implemented gradually to help students adapt to the new instructional mode of delivery.

Second, teachers should choose digital learning platforms and applications that are user-friendly, easy to access, and pedagogically driven. Integrating technology within a pedagogically meaningful framework such as TPACK may ensure alignment among content knowledge, pedagogy, and technology.

Third, teachers are recommended to create writing tasks that follow a recursive cycle of modeling, joint constructing, and independent constructing combined with the recursive stages of process writing. This would allow the students to plan, draft, revisit, and refine before publishing their final product.

Fourth, future implementation of the flipped process-genre writing model should create a balanced instructional design that targets all the writing elements equally.

Finally, future researchers should investigate the long-term implementation of flipped process-genre instruction to determine whether the observed gains can be sustained over time. Also, they can apply the model to different writing genres at different educational levels using large sample sizes to validate its degree of effectiveness in enhancing students' writing skills.

LIMITATIONS

While the results are promising, several limitations should be acknowledged. First, the sample was limited to four intact classes (divided into two groups, control vs experimental) from a single institution, which may affect the generalizability of the findings. Second, the duration of the intervention was relatively short (four weeks); writing is a skill that develops over time, and longer-term studies could provide deeper insights into the sustained impact of flipped instruction. Third, despite efforts to ensure validity and reliability, data from questionnaires and interviews are subject to social desirability and recall bias. Lastly, while ANCOVA helped control for initial differences, true experimental control was not possible due to the study's quasi-experimental nature.

CONCLUSION

The statistical analyses revealed that students in the experimental group significantly outperformed their peers in the control group in writing. The ANCOVA results confirmed that the differences in posttest means were attributable to the intervention. The flipped group demonstrated statistically significant gains across three dimensions, Content, Coherence and Cohesion, and Grammar and Mechanics. However, the Organisation skill was not statistically significant. This indicates that although overall writing performance favoured the experimental group, analysis of individual writing elements revealed that the instructional design may not have provided sufficient explicit scaffolding for organizational development. This seemingly contradictory result does not mean that the flipped process-genre approach is not effective, rather it indicates a different view of writing as composed of different components that require equal attention from the teacher. Overall, the integration of process-genre oriented steps such as brainstorming, drafting, joint construction, independent construction, peer-reviewing, and revising within the flipped learning framework allowed students to master and practice writing strategies with greater success than those taught through the non-flipped process genre writing model. Moreover, the study showed that students' perceptions of the flipped process-genre model were predominantly positive towards the four constructs. Most students agreed or strongly agreed that the flipped classroom approach improved their writing skills, boosted their motivation, and made learning more engaging. Undoubtedly, this flipped model gave students chance to develop autonomous skills such as managing their task and time, doing their tasks independently, working at their own pace, taking ownership of their learning, and providing feedback to their peers during in-class writing activities. These findings resonate with the theoretical underpinnings of flipped learning, particularly its capacity to foster learner-centered environments where students are actively engaged in the learning process. Therefore, this study can be considered as constructive contribution to the growing body of research on flipped learning by extending its application to a process-genre-based writing classroom in an EFL secondary school context.

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