3L: Language, Linguistics, Literature® The Southeast Asian Journal of English Language Studies
Vol 29(3), September 2023 http://doi.org/10.17576/3L-2023-2903-13

Combining Sociocognitive-transformative Approach and Form-focused Instruction: Effects on L2 Learners' Complexity, Accuracy and Fluency in Writing

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ABSTRACT

Many pedagogical approaches have attempted to systematically integrate form-focused instruction (FFI) into L2 writing, namely the process approach, the product approach, the post-process approach, and the process-genre approach. However, these approaches continue to provide conflicting findings on how they can improve students' overall writing skills and grammatical accuracy and fail to consider the sociocognitive aspect of L2 writing. Thus, the current study examined the effects of a combined sociocognitive-transformative (ST) approach and FFI on L2 writers' complexity, accuracy, and fluency (CAF) in writing. This quasi-experimental study involved 72 students from a private university in Pakistan. The findings revealed that L2 writers significantly improved in all fluency measures and in certain accuracy and complexity measures after being exposed to the treatment. The improvement in writing fluency was attributed to their increased rhetorical awareness and focus on content during writing. Meanwhile, the improvement in accuracy was linked to the contextualised teaching of linguistic items and learners' psycholinguistic readiness in learning these items. Finally, the mixed results in fine-grained measures of accuracy and complexity were linked to the possible interaction between these measures. Implications for L2 writing pedagogy and future studies are discussed.

Keywords: accuracy; complexity; fluency; form-focused instruction; sociocognitive-transformative approach

INTRODUCTION

Second language (L2) writing pedagogy has undergone major shifts during the past several decades. From the process approach, this focus of the field has evolved into the process approach, the product approach, the post-process approach, and the process-genre approach (Atkinson, 2003; Badger & White, 2000). While these approaches aim to improve the writing performance of L2 writers, they fail to consider the sociocognitive aspect of L2 writing (Nishino & Atkinson, 2015). One viable approach that was introduced to address these issues is the sociocognitive-transformative (ST) approach, which is anchored on the functional-interactional theory and emerged as a reaction to the previous approaches (Barrot, 2018). This approach allows students to

recognise the affiliation between the purpose and form of a specific genre while making use of the recursive writing process. However, the lack of systematic integration of form-focused instruction (FFI) into process-genre-oriented approaches, such as the ST approach, remains an issue.

FFI has recently been the focus of debates in the field of language teaching. It refers to any pedagogical effort that draws students' attention to language form (Spada & Lightbown, 2008). Given the substantial evidence that proves its efficacy in promoting language learning (Spada, 2022), the point of discussion today is not anymore about its adoption, but on the timing FFI is most beneficial, whether FFI should be introduced before or after a meaning-based writing task. This debate extends to the field of the second language (L2) writing pedagogy. Questions as to when and at what point of L2 writing instruction FFI should be integrated continue to be of interest among L2 writing scholars and practitioners (Spada, 2022).

Although there have been studies that examine the viability of the ST approach within the context of L2 writing (e.g., Barrot, 2018; Maulidah, 2015), the present study did not substantially integrate FFI into the L2 writing process, which resulted in the students' non-improvement in writing accuracy; thus, he suggested that future studies systematically incorporate FFI into the teaching process. Moreover, no such study has been conducted in Pakistan, where English is used as a second language (ESL). It means that English is used as the medium of teaching and learning for university students and is also taken as a compulsory course or an elective during the study programme. Thus, the current study is undertaken to fill in this gap. Specifically, the following research question was addressed: How do the combined ST approach and FFI affect L2 writers' complexity, accuracy, and fluency (CAF, henceforth) in writing? Aside from systematically integrating FFI into the writing process, this study advances the L2 writing field by examining students' written output from the CAF perspective to capture the multidimensionality of L2 writing performance (Barrot & Agdeppa, 2021).

LITERATURE REVIEW

APPROACHES TO TEACHING WRITING

Teaching writing is a dynamic and multifaceted endeavour, encompassing a range of approaches that cater to diverse learning styles and objectives. As L2 writing teachers strive to cultivate writing skills in their students, they often turn to four distinct methodologies: the product approach, the process approach, the genre approach, and the process-genre approach. Each of these approaches offers a unique lens through which writing is taught, emphasising different aspects of the writing journey, from the end result to the cognitive and creative processes involved. According to Mehr (2017), the product approach highlighted syntax, emphasising rhetorical training. Students subjected to the product approach draft an essay while imitating the already drafted pattern. In this way, the focus of such writing pieces is laid on the written product and not on the writing process itself. Here, writing is concerned only with the knowledge pertaining to the structure of language and becomes the result of an imitated input that was provided by the teacher to the learners in the form of text scripts (Memari Hanjani, 2015). However, the product approach to writing faced strong criticisms from scholars and practitioners, such as the lack of focus on the process of producing an output. These criticisms brought a major paradigm shift within the L2 writing field by introducing the process approach to writing.

The process approach centres on the processes that writers undergo when composing a text, such as pre-writing, drafting, and revising. Hence, it treats the writing process as an important element when teaching writing and moves away from too much emphasis on the final written output. According to Li et al. (2020), the process approach affects the understanding of how to write a piece of text and how writing is taught. It accentuates the prominence of a recursive procedure pertaining to pre-writing, drafting, evaluating, and revising. This kind of approach is more learner-centred because the teacher only facilitates the learners to enhance their writing potential rather than providing a stimulus to them based on their own views. Despite the popularity of the process approach, it has been subjected to serious scrutiny for upholding a monolithic view of writing (Badger & White, 2000). This is because the process of writing is seen as not changing regardless of the text content or target audience (Atkinson, 2003; Rahimi & Zhang, 2022).

To address the weaknesses of the process approach, the genre approach was introduced. This approach emphasises that the student's ability to write and the act of writing itself is a social activity that is based on needs, requires outcomes, and requires learners to use language effectively (Ganapathy et al., 2022). It also allows learners to understand the text structure and the reason for using such a structure. While the genre approach is a good alternative for teaching writing, it has been criticised for looking at learners as passive individuals (Badger & White, 2000).

After considering all the weaknesses and strengths of the three earlier approaches, Badger and White (2000) synthesised these three earlier approaches, resulting in a process-genre approach. This approach allows learners to understand the relationship between the form and the purpose of a particular genre while adopting the recursive writing processes. Moreover, it emphasises both the cognitive and social components of writing for more contextualised writing. One approach that draws from the process-genre approach is the ST approach, which intends to produce communicatively competent and multiliterate lifelong learners who can contribute to and participate in a knowledge-based global society for self- and social transformation. Figure 1 shows how writing processes have changed over time. It is important to note that the period in which these approaches dominated the teaching of writing is not mutually exclusive and might have overlapped with one another.

FIGURE 1. Development of writing processes

Theoretically, the ST approach is primarily anchored on the sociocognitive theory, which argues that learning is a contextualised and active process of knowledge construction based on the interdependence between social and cognitive aspects of language (Atkinson, 2003). Atkinson (2003) further explains that language learning is not purely cognitive as it critically links with politics, culture, ideology, ecology, and identity. This theory also claims that language acquisition happens when the learner's inner system interfaces with social and linguistic conditions present in the surrounding environment (Barrot, 2018). To put simply, language learners are able to construct knowledge through socialisation or social negotiation within authentic contexts. In the case of L2 writing, this functional interactive perspective views writing as an activity that focuses on

establishing social exchanges between interlocutors while making use of expression and meaning to realise interpersonal relations.

From a classroom application perspective, the ST approach is translated into a specific teaching-learning process through the following phases (Barrot, 2018): preparation, modelling, planning, collaborative writing, individual writing, revising, editing, and publishing. These phases, individually or collectively, find theoretical and empirical support from the extant literature (e.g., Land, 2022). During the preparation phase, the instructor determines the context or setting for the writing tasks while undertaking a specific type of text. During the modelling phase, the instructor gives model scripts of the required genre and gives students a chance to analyse and read them in order to understand their structure. Amid the planning stage, the learners conceptualise, brainstorm, and draft points that will later be used to form individual or collaborative writing. In both individual and collaborative writing, learners produce their drafts that are subjected to multiple stages of feedback. The first feedback comes from a peer who focuses on the content, structure, and organisation. The second feedback comes from the teacher, who also focuses on the content, structure, and organisation. The final feedback may come from the peer or involve self-feedback, which focuses on language. Given the recognised benefits of feedback (Chuenchaichon, 2022), this multiple feedback mechanism is expected to improve the complexity, accuracy, and fluency of student's written output. During the final phase, learners are expected to publish their writings online so that they are able to take ownership of their work and acquire digital knowledge. Figure 2 shows the different writing phases of the ST approach.

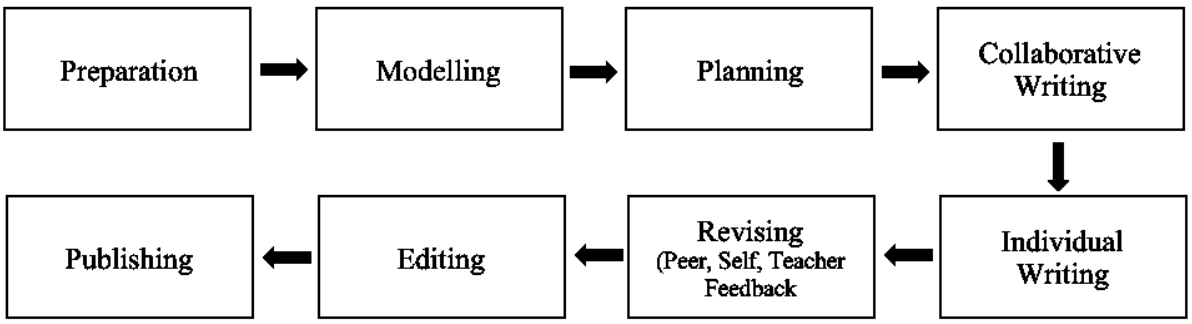

FIGURE 2. The sociocognitive-transformative approach to the writing process

There are various features of the ST approach which could enhance learners' performance in their writing endeavours. Learners are able to explore different model scripts before drafting any piece. In this way, they are able to analyse and brainstorm expository conventions of these drafts. Subsequently, students get exposed to the linguistic structure and vocabulary, with grammar and other rhetorical features based on the objective content. It is also hypothesised that as learners consolidate this comprehension and mindfulness into their own writing, their composition performance, especially the fluency and complexity of their drafts, will, as a result, improve.

FORM-FOCUSED INSTRUCTION (FFI)

One important component that lacks explicitness in process-genre-oriented approaches such as the ST approach is the teaching of form. In language teaching in general, Spada and Lightbown (2008) distinguished two forms of FFI in terms of the pedagogical timing of attention to form. These are

isolated FFI and integrated FFI. Isolated FFI occurs when attention to form is done separately from meaning-focused activities in a lesson. However, it should not be equated to meaningless drills and mechanical repetition. Instead, linguistic items are taught within a communicative-based practice (Spada, 2022). Unlike isolated FFI, integrated FFI occurs when attention to form is done within a communicative-based practice. It is similar to the concept of planned and incidental FFI, which involves the teaching of linguistic items that may have been anticipated or have occurred incidentally. In an integrated FFI, learners fully integrate language form into communicative practises, attend to language form contextually, and receive feedback and a brief explanation about their use of linguistic items for a more accurate and effective communicative act (Spada & Lightbown, 2008). Despite the growing support for FFI (e.g., Spada, 2022), very limited research in this area within the context of L2 writing is available. Among them are Shintani (2017), who investigated the effects of timing of explicit instruction on students' grammatical accuracy, and Khezrlou (2021), who examined the impact of availability and timing on EFL learners' writing accuracy and fluency. Both studies further confirmed the potential of FFI in improving writing performance. However, FFI in these studies was not systematically incorporated into the process-genre-oriented writing process. Thus, it is also important to look into how FFI would affect students' writing performance within the ST approach and from a multidimensional perspective (i.e., CAF perspective).

RELATED STUDIES

Currently, studies that examine how FFI affects students' writing performance are evidently limited. One such study was that of Barrot (2014), who examined how isolated and integrated FFI affects college students' productive skills, such as writing. This quasi-experimental study indicated that those exposed to the combined isolated and integrated FFI significantly improved their writing performance. However, this study lacked two treatment groups (i.e., isolated FFI only and integrated FFI only) to understand the individual effects of these two types of FFI. Gwiazda (2015) conducted a parallel study that employed an explanatory sequential mixed-method design. To complement Barrot's (2014) work, Gwiazda (2015) used three groups: a control group (no FFI), isolated FFI only, and integrated FFI only. While the two treatment groups outperformed the control group, isolated FFI appeared to have a greater positive impact on students' writing performance compared to integrated FFI. This finding was attributed to the increased ability of students to notice the linguistic forms. Nonetheless, it should be noted that Gwiazda's (2015) work was not situated within the context of process-genre-oriented approaches, such as the ST approach for more systematic integration of FFI into the writing process.

To date, two published works have reported the robustness of the ST approach in the context of teaching writing (i.e., Barrot, 2018; Maulidah, 2015). As a response to teaching 21st-century learners, Maulidah (2015) adopted this approach as a materials design framework for the development of instructional materials for writing, which she titled *Pen Your Ideas (PYI)*. Using a descriptive qualitative design, her findings revealed that the approach was a tenable framework for developing instructional materials for writing, particularly in selecting topics, maintaining lesson coherence, and ensuring efficiency in instructional delivery. Further findings revealed that the approach was instrumental in developing students' reading and writing skills simultaneously, promoting reflective learning, providing students with an opportunity to participate in social activities and transformation, and developing their 21st-century skills. Although this study provided initial data on the viability of the approach to improving students' writing skills, the study did not employ an experimental study to prove a causal relationship. Hence, Barrot (2018)

conducted a quasi-experimental study that used both the scale-based approach and CAF analysis to comprehensively capture the effects of the approach on students' writing performance. A total of 66 pre-university students took part in the study. Findings revealed that students improved in their writing performance using the scale-based approach. Using the CAF analysis, findings revealed that the experimental group improved in their fluency and complexity but not in their accuracy. The experimental group has also outperformed the control group in most CAF subcomponents. To address the issue of non-improvement in accuracy, Barrot (2018) suggested that FFI be integrated into the writing process, specifically after teacher feedback. Thus, such a recommendation was adopted in the current study to move this line of research forward.

METHODOLOGY

CONTEXT AND PARTICIPANTS

This quasi-experimental study involved 72 ESL students from a private university in Pakistan. Since the design of the study is quasi-experimental, we divided the two sections into the control (*N*=36) and the treatment (*N*=36) groups. They were enrolled in the English academic writing class during the second semester and had been given the same extent of instruction. The participants' ages ranged from 18 to 22. Both the control and treatment groups had a low intermediate level of English proficiency based on the institutional diagnostic test for writing, which has been used for the past several years and was validated by the university English language teaching experts. Moreover, the pre-test results revealed that there is no significant mean difference between the control and the treatment group, suggesting that the two groups were comparable.

We also made sure that both the treatment and control groups had a homogenous background, such as their L1 (i.e., Urdu). This is in accordance with what Ortega (2015) argued that the L1 background of learners should be probed before making them part of any study. Moreover, to mitigate instructional differences which may influence results, both groups were taught by the same English teacher.

WRITING TASK

The participants wrote two essays: a pre-test (entry essay) and a post-test (exit essay) in writing. Therefore, a total of 144 essays were analysed. The entry essay was written during the first week of the term, and the exit essay was written in the last week of the term after the intervention. The participants were asked to write an argumentative essay of not less than 300 words in no more than 90 minutes. We made sure that the writing conditions in both tests were uniform in terms of setting (classroom), text type (argumentative essay), time allotment (90 minutes), and essay length (at least 300 words) without the aid of a computer or any references. The reason we asked the participants to write an argumentative essay is that it was a core component of students' course outlines. It also allowed students to embed other text types (narrative, expository, cause and effect, and definition) covered by the syllabus. Moreover, while giving writing topics to the participants, we made sure that the participants were given topics familiar to them so as not to affect their writing performance. A different but familiar topic was used by the participants during the post-test to control for the topic familiarity.

The collected essays were independently marked by three experienced English language instructors who had more than five years of teaching experience at the university level (Graham et al., 2020). All three English language teachers used IELTS writing task 2 descriptors for the essay marking of the participants. IELTS writing task 2 was used because it is the rubric appropriate for argumentative essays and has been extensively used in previous studies for its reliability (e.g., Tieu & Baker, 2023).

PROCEDURE

We selected the *Academic & Professional* Writing class that fundamentally focused on developing students' writing skills. The classes were scheduled for three hours per week for 13 weeks. Both groups were taught the same types of essays, which were classified into major and minor essays. The major essays covered the definition and argumentative essays, while the minor essays included narrative, expository, and cause-and-effect essays. Both the control and treatment groups adopted the ST approach.

Both the control and treatment groups were allocated 11 weeks of teaching. The first and the last weeks were dedicated to pre-test and post-test in writing. The students in the treatment group were taught using the ST approach. During the preparation phase, the teacher gave the students a particular situation, helped learners activate their prior knowledge by linking the lesson/topic to their current knowledge and experience through questioning and processing of input, and ultimately enabled them to predict the structural features of the target text. After that, the learners in the treatment group were asked to sit in groups to discuss the main idea, content, objective, and specified audience. These activities were used by the learners as a guiding tool for their writing tasks. The learners in their specific groups were asked to select their topics of interest, keeping their audiences and language style in mind. Subsequent to the preliminary preparation stage, the teacher gave the model text to the learners. Then, the learners, in pairs, started to probe the text for their target audience, sentence structure, semantic features of the language, and content of the text. During this stage, the teacher provided feedback on the structure of the sample text, content, and organisation. These two phases are in line with the sociocognitive theory, which emphasises the interdependence between social and cognitive aspects of writing.

Thirdly, the teacher directed the learners to plan their writing in this phase. The learners in this stage went through three stages: brainstorming, preliminary research, and outlining. After gathering all the relevant materials, the learners did some research to gather relevant references regarding their topic. Finally, in groups, the learners made the outline of their essays. Thereafter, they drafted their essays mutually. Collaborative learning is deemed a significant aspect of the approach as it provides linguistic support to the students. Both the planning and collaboration phases are in keeping with the interactionist stance of the sociocognitive theory, that is, knowledge construction is facilitated through socialisation and negotiation.

After collaborative writing, learners all started their individual writing. During this stage, learners underwent the same process they did during collaborative writing. Once they finished their individual paper or first draft, they exchanged papers with a peer and evaluated each other's work in terms of clarity, content, and text organisation. Then, each of them revised their own work based on their peers' comments. After finalising their second draft, the learners handed over their work to their teacher. Upon receiving the essays, the teacher evaluated them and provided the learners with feedback. The paper that incorporated all the feedback they received from their teacher became their final draft.

Note that the control group did not systematically integrate FFI into the teaching process. Instead, the teacher limited the written feedback to the grammatical errors that impeded the meaning of the statement. Conversely, the teacher systematically integrated FFI into the teaching process in the treatment group. He devoted at least one session to FFI before the learners in the treatment group proceeded to self-editing. This session focused on the common errors committed by the learners in their second draft with the aim of improving their linguistic accuracy. It is expected that self-editing after FFI further reinforces their mastery of grammatical form and structure. The inclusion of explicit teaching of grammar is theoretically drawn from skill acquisition theory, which argues that maximum understanding is achieved when FFI is followed by communicative activities (e.g., peer editing) that tap into students' consciousness in declarative form and information processing theory, which claims that learners would have difficulties in simultaneously attending to form and meaning because of their limited attentional capacity. After editing, the learners were instructed to publish their work on a free-of-cost blogging website, such as Microsoft Sway. It is fundamental to inculcate a sense of ownership in the learners so as to make them conscious of their work. Figure 3 summarises the experimental procedure adopted by this study.

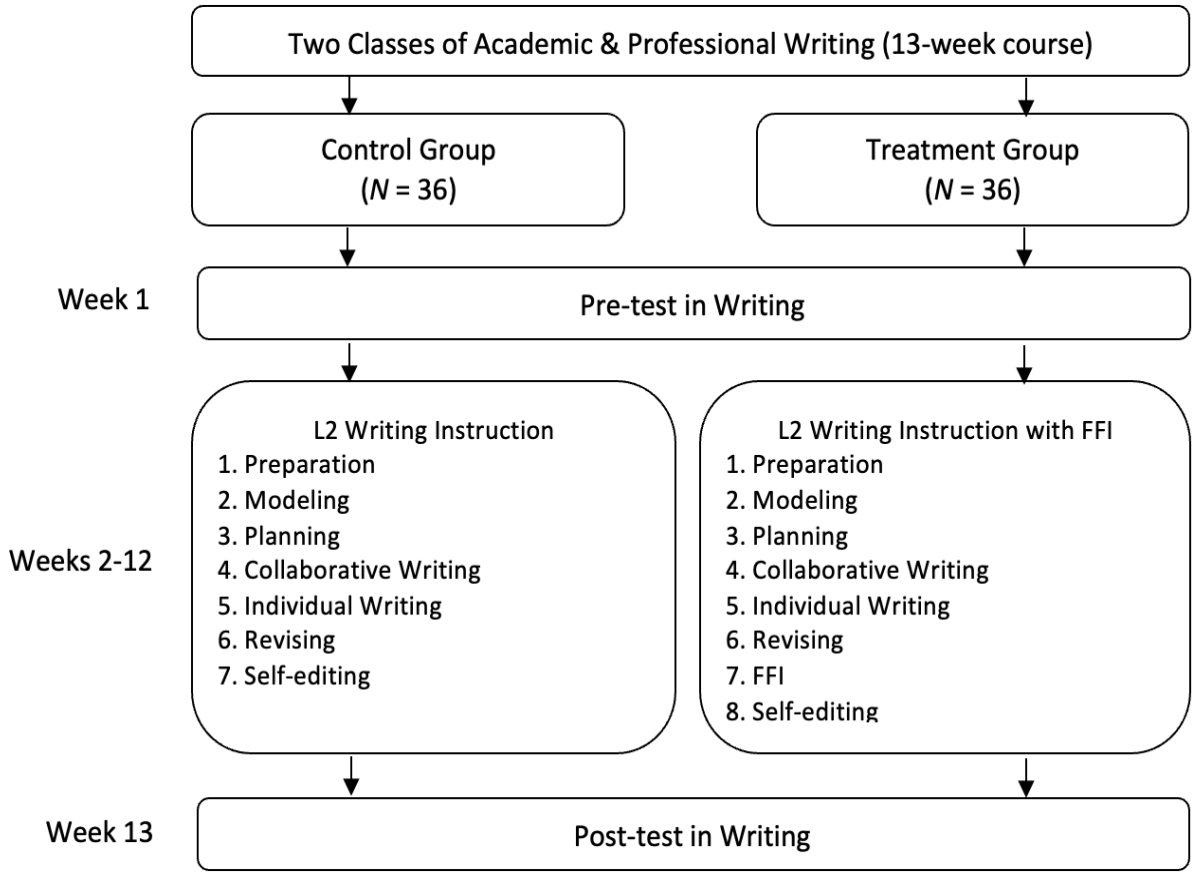

FIGURE 3. Experimental procedure

DATA ANALYSIS

To find whether any significant difference exists between the essays of the treatment and the control groups, we examined the essays using CAF analysis. CAF analysis has been used and considered by many L2 writing scholars as a useful and comprehensive approach to capturing the different aspects of L2 writing performances (Barrot, 2015; Kuiken & Vedder, 2019). Historically, complexity has been operationalised through syntactic units such as T-units (shortest unit of a text that contains one independent clause and its dependent clause/s), sentences, or clauses (Wolfe-Quintero et al., 1998). For a more nuanced understanding of CAF, we computed the complexity by measuring the proportion of clauses to T-units (C/T) (Ellis, 2009) and the percentage of dependent clauses among all clauses (%DC/C) (Wolfe-Quintero et al., 1998). Complexity refers to the range and sophistication of syntactic structures produced by L2 writers (Ortega, 2015).

Another dimension of writing performance that was examined was accuracy, which is characterised by being free from errors when using the language (Wolfe-Quintero et al., 1998). It was computed by calculating the proportion of error-free T-units among all T-units (EFT/T) and error-free clauses among all clauses (EFC/C) and transforming them into percentages (Polio & Shea, 2014). While some researchers argue that these two ways of computing accuracy fail to account for error severity (Foster & Wigglesworth, 2016), Bulté and Housen (2012) were of the view that these two measures of computing accuracy remain constructive. Similarly, Polio and Shea (2014) unveiled that there exists a significant connection among the various error-measuring techniques because they are connected; consequently, the adoption of one error-measuring technique does not render the other one void.

Lastly, there is fluency, which refers to the ability to produce written words and other structural units in a given time (Van Waes & Leijten, 2015). To measure fluency, the researchers calculated the average number of words per text (AW/Tx), average number of T-units per text (AT/Tx), and average number of clauses per text (AC/Tx) (Barrot & Agdeppa, 2021). For instance, AW/Tx for the post-test of the treatment group was computed by adding the number of words per essay divided by 36. The same computation was done for AT/Tx and AC/Tx.

CAF analysis was performed using an L2 Syntactic Complexity Analyser or L2SCA (Lu, 2010). L2SCA was used to examine AW/Tx, AT/Tx, AC/Tx, C/T, and %DC/C. In addition, the participants' writing accuracy was computed manually by two expert raters who were part of the essay raters. The agreement between these raters was 79 per cent, which could have resulted from their rater type (Eckes, 2008). Nonetheless, any differences were discussed by the raters to arrive at an agreement.

RESULTS

All the essays were analysed using descriptive and inferential statistics. More specifically, means (M) and standard deviation (SD) were used to determine the decrease or increase in CAF measures by both groups. A T-test for independent samples was used to compare the means of treatment and control groups, while a paired t-test was applied to find the difference between the mean scores of the pre-test and post-test results for both groups.

TABLE 1. Complexity measures in essays by the treatment group and control group during pre-test and post-test

	Pre-test				Post-test			*p*-value
	Total	M	SD	Change	Total	M	SD	
Treatment group								
T-units	717	19.92	3.73	+8.08	1008	28.00	3.91	<.0001
Clauses	1357	37.69	4.77	+20.20	2084	57.89	5.00	<.0001
DC	633	17.58	4.55	+10.14	998	27.72	4.74	<.0001
C/T		1.89	0.18	+0.21		2.10	0.13	<.0001
% DC/C		46.65	9.50	+1.21		48.21	9.04	.428
Control group								
T-units	692	19.22	2.84	+3.14	805	22.36	2.91	<.0001
Clauses	1324	36.78	4.43	+3.89	1464	40.67	4.43	<.0001
DC	663	18.42	4.66	+0.61	685	19.03	4.68	.003
C/T		2.10	0.33	-0.25		1.85	0.30	<.0001
%DC/C		50.08	15.07	-3.29		46.79	13.81	.003

Table 1 presents the complexity of the essays written by both the treatment and the control group. As shown, both the treatment group and the control group obtained significant gains in T-units, clauses, and dependent clauses during the post-test. However, findings are mixed in terms of C/T and %DC/C. For the treatment group, while both C/T and %DC/C posted gains during the post-test, such an improvement is significant only in C/T (t[35] = 4.596, p=<.0001) with a large effect size (d=0.77). For the control group, both C/T and %DC/C have significantly decreased. After comparing the post-test scores of the control and treatment groups, findings reveal that the treatment group outperformed the control group in so far as C/T (t[35] = 3.745, p=.001) with a large effect size (d=0.62). No difference was obtained in %DC/C.

TABLE 2. Accuracy measures in essays by the treatment group and control group during pre-test and post-test

	Pre-test				Post-test			
	Total	M	SD	Change	Total	M	SD	*p*-value
Treatment Group								
EFT/T	605	16.80	2.90	+6.92	854	23.72	3.15	<.0001
%EFT/T		84.64	2.92	+0.36		85.00	6.23	0.710
EFC/C	1221	33.91	4.73	+19.84	1935	53.75	3.93	<.0001
%EFC/C		90.18	3.16	+3.31		93.31	4.73	<.0001
Control Group								
EFT/T	574	15.94	2.44	+2.33	658	18.27	2.36	<.0001
%EFT/T		82.97	4.00	-1.19		81.78	2.45	0.162
EFC/C	1174	32.61	3.85	+3.17	1288	35.78	3.67	<.0001
%EFC/C		88.75	3.09	-0.69		88.06	2.23	0.423

Regarding accuracy measures, Table 2 shows that the treatment group posted higher scores during the post-test in both %EFC/C and %EFT/T. However, it is only in %EFC/C that the improvement is significant (t[35] = 5.099, p=<.0001) with a large effect size (d=0.85). A different picture was revealed regarding the accuracy of essays produced by the control group. Both %EFC/C and %EFT/T decreased during the post-test, but the decrease was not significant. When the post-test scores of both groups are compared, data shows that the treatment group posted significantly higher accuracy scores in %EFC/C (t[35] = 7.004, p=<.0001) with a large effect size (d=1.17) and %EFT/T (t[35] = 3.051, p=.004) with a medium effect size (d=0.51).

TABLE 3. Fluency measures in essays by the treatment group and control group during pre-test and post-test

	Pre-test			Post-test		
	M	SD	Change	M	SD	*p*-value
Treatment group						
AW/Tx	379.05	71.11	+192.42	571.47	86.36	<.0001
AT/Tx	19.91	3.73	+8.09	28.00	3.90	<.0001
AC/Tx	37.70	4.77	+20.18	57.88	4.99	<.0001
Control group						<.0001
AW/Tx	363.44	2.84	+76.64	440.08	82.95	<.0001
AT/Tx	19.22	2.83	+3.14	22.36	2.91	<.0001
AC/Tx	36.77	4.43	+3.90	40.67	4.43	<.0001

In terms of measures of fluency (Table 3), findings reveal that both the control and treatment groups gain significantly in all aspects of fluency with large effect sizes ranging from d=5.61 to d=14.32 for the treatment group and d=3.77 to d=4.55 for the control group. As shown in Table 4, when the post-test scores in the accuracy of both groups are compared, data shows that the treatment group outperformed the control group in all three areas of accuracy with a large effect size. Table 4 further illustrates that the treatment group outperformed the control group in almost all CAF measures except %DC/C.

TABLE 4. Difference between the post-test performances of the control group and the treatment group

	T-test for Equality of Means			
CAF Measures	*t*	*p*-value	Mean Difference	SE Difference
C/T	3.500	.001	0.26	0.07
%DC/C	.242	.809	0.01	0.03
%EFT/T	2.959	.004	0.03	0.01
%EFC/C	6.035	<.0001	0.05	0.01
AW/Tx	6.416	<.0001	134.79	21.01
AT/Tx	7.102	<.0001	5.95	0.84
AC/Tx	14.528	<.0001	16.99	1.17

DISCUSSION

The main aim of this study was to examine the effects of combining FFI and the ST approach on L2 learners' writing performance. The findings reveal that the learners performed better after being exposed to the intervention, particularly in the accuracy measures. The treatment group has also outperformed the control group in almost all CAF measures. These findings may be attributed to the features of the ST approach that promote the development of CAF, such as self-editing for accuracy and planning and analysis of model text for complexity and fluency. These findings support and extend previous studies on the positive effects of the ST approach (Barrot, 2018) and of FFI on learners' writing performance (Barrot, 2014; Khezrlou, 2021; Shintani, 2017; Spada & Lightbown, 2008).

The findings revealed gains in the post-test scores in both %DC/C and C/T, but significant improvement was only observed in the latter. Aside from the possible interaction between the fine-grained measures of accuracy and fluency, the non-improvement in %DC/C may be attributed to the duration of the intervention (i.e.,13 weeks). According to Ortega (2003), the improvement in grammatical complexity may take up to 12 months before it can develop. Moreover, these findings partially support earlier studies (e.g., Barrot, 2018) which claim that more proficient writing is linked to increased use of subordination. A scale-based approach was used to confirm whether the treatment group's writing performance was better than the control group during the post-test. The results show that the treatment group had a significant improvement from pre-test to post-test ($p=<.0001$) and outperformed the control group when post-tests were compared ($p=<.0001$).

Unlike Barrot's (2018) findings, the current study reveals an improvement in the accuracy scores of L2 writers. This result supports the earlier hypothesis that integrating FFI into the writing process would increase the accuracy of L2 writers' essays. In this study, the target linguistic items during FFI were based on the common errors committed by the learners. This means that they are psycholinguistically ready to learn these linguistic items, thus facilitating the learning of these forms. When students begin to use certain forms incorrectly, it suggests that they are psycholinguistically ready to accommodate or learn such forms (Pienemann, 1998). Also, contextualised grammar teaching further helps learners digest these linguistic forms. However, not all measures of accuracy had significant improvement. While there was a significant increase in %EFC/C, the improvement in %EFT/T was not statistically significant. These findings mean that students tend to use correct forms when writing clauses rather than when writing other parts of sentences or t-units. The mixed results may be attributed to the possible interaction between accuracy and complexity as put forward by the trade-off hypothesis and reported by earlier studies (e.g., Wolfe-Quintero et al., 1998). The trade-off hypothesis suggests that students' fluency and complexity may be inhibited due to heavy focus on accuracy (Skehan, 1998). However, in the case of the current study, we can speculate that the interaction was at the fine-grained measures of accuracy and complexity. Further studies are needed to validate this hypothesis.

There could be a number of different reasons for these results. First, the improvement in all measures of fluency (i.e., AW/Tx, AC/Tx, and AT/Tx) may be attributed to some stages of the writing process of the approach. For instance, the frequent outlining and text analysis during the modelling stage may have improved learners' rhetorical awareness and, in turn, promoted fluency in writing, as earlier reported by Ortega (2003). These two stages of writing may have also provided textual schema to the learners while writing their post-test essays. Another possible reason for the improvement in the writing fluency of learners is their focus on content rather than on form during the writing of all in-class essays. For example, students were instructed during self-

and peer editing and revision to focus on content and organisation rather than on form. By prioritising the content and organisation during the writing of all minor and major essays for the whole semester, students might have also focused on content rather than on form during the post-test.

From a theoretical standpoint, the positive effects of the combined ST approach and FFI support the critical role of social interaction (e.g., planning, peer editing, and collaborative writing) and contextualised writing (e.g. setting the purpose and context of writing during the preparation stage) which may have improved the writing fluency of students. Meanwhile, the significant improvement in writing accuracy may be explained by the timing (i.e., post-writing FFI) and availability of FFI within the writing process, as emphasised by the skill acquisition theory and information processing theory. In the case of this study, FFI and editing was done after polishing the content (meaning focused) to reinforce contextualised learning of forms and address learners' limited attentional capacity.

CONCLUSION

The aim of the current study was to examine the effects of integrating the ST approach and FFI on L2 writers' CAF. Results revealed that the said integration would lead to a significant improvement in fluency measures and in certain accuracy and complexity measures. The scale-based assessment also confirms the overall improvement in learners' writing performance. Learners' improvement in writing fluency was linked to their increased rhetorical awareness and focus on content during writing. This means that students produce longer output when they are aware of the text structure prior to writing their own essays. Meanwhile, the improvement in accuracy was attributed to contextualised teaching of linguistic items and their psycholinguistic readiness in learning these items. In other words, it is important to teach the forms that correspond with the type of text being written and are being attempted to use by students. Finally, the mixed results in fine-grained measures of accuracy and complexity were linked to the possible interaction between these measures.

The current study has some useful implications for English writing classes. First, the integration provides empirical support for the value of systematic integration of FFI into writing pedagogy and the strategic phase in which it should be done (i.e., after the final draft). Secondly, findings suggest that a significant increase in all CAF measures may be challenging to attain because of the trade-off among them. Hence, CAF measures are better appreciated when used in conjunction with the scale-based approach to obtain a full picture of learners' writing performance.

While the current study provided relevant insights, some limitations need to be considered for future studies. First, the study was limited to one university with 72 ESL participants. Hence, the findings cannot be generalised to other learning contexts where English is used as a foreign language or first language. Future studies may employ the same intervention in multiple contexts and use a larger sample size to obtain more conclusive findings. Second, the non-improvement in some measures of complexity and accuracy may be linked to the short duration of intervention. Hence, future studies may employ the treatment for a longer period (i.e., 12 months) to corroborate learners' long-term language development. Lastly, since the writing was limited to argumentative essays, the appreciation of results may be limited to this text type only. Thus, it is recommended to test the same treatment on different text types (e.g., narrative and descriptive) to have a clearer picture of its effects on the English writing performance of the learners.

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