Teaching English as a Second Language Quarterly (TESLQ)
(Formerly Journal of Teaching Language Skills)
44(1), Winter 2025, pp. 53-76
https://doi.org/10.22099/tesl.2024.51345.3333
Online ISSN: 2981-1546
Research Paper

The Combined Effects of Task Sequencing and Indirect Corrective Feedback on L2 Writing: Examining the SSARC Model

Sara Ziaei [1] **Mansoor Tavakoli** [2*]
Zahra Amirian [3]

Abstract

Task sequencing (TS) has been a focus of empirical investigations in task-based language teaching (TBLT). Previous studies on TS failed to represent classroom contexts because they did not provide learners with corrective feedback (CF). This study aimed to address this gap by examining the combined effects of TS and CF on writing complexity, accuracy, and fluency (CAF). To do so, 113 upper-intermediate EFL learners were selected and divided into two groups. Participants took a pretest at the beginning of the study. Each group performed two three-task sets in simple-to-complex(S-C) or complex-to-simple(C-S) order. In each group, the errors in the first set of tasks were given CF by error codes (ECs), while the errors in the second set were only underlined. Participants in both groups were asked to revise their texts based on the provided CF and take a posttest at the end of the study. Multivariate analysis of variance (MANOVA) was run to analyze the pretest and posttest data. The results showed that the group performing tasks in S-C order and receiving ECs outperformed the others. Findings supported the SSARC (Stabilize, Simplify, Automatize, Reconstruct, Complexify) model. The study has implications for material development.

Keywords: Task Sequencing, Error Codes, Underlining, The SSARC Model

Task-based language teaching (TBLT) is a communicative method that views language primarily as a way of communication rather than a goal of study (Ellis, 2003). Students learn language communicatively through meaningful, well-designed, and sequenced tasks (Manuel, 2022). According to Ellis (2003), TBLT is an approach that focuses on the many tasks that language learners do. In the early days of TBLT, researchers suggested models for developing syllabi that sequenced tasks in terms of how demanding they were (Prabhu, 1987) or how well they addressed learners' needs (Candlin, 1984). However, such models were scolded for being

* Received: 05/10/2024 Accepted: 28/12/2024

[1] Ph.D. Candidate, Faculty of Foreign Languages, University of Isfahan, Isfahan, Iran; saraziaei@fgn.ui.ac.ir
[2] Professor, Faculty of Foreign Languages, University of Isfahan, Isfahan, Iran (Corresponding Author); tavakoli@fgn.ui.ac.ir
[3] Associate Professor, Faculty of Foreign Languages, University of Isfahan, Isfahan, Iran; z.amirian@fgn.ui.ac.ir

How to cite this article:
Ziaei, S. , Tavakoli, M. and Amirian, Z. (2025). The Combined Effects of Task Sequencing and Indirect Corrective Feedback on L2 Writing: Examining the SSARC Model. *Teaching English as a Second Language Quarterly (Formerly Journal of Teaching Language Skills)*, *44*(1), 53-76. doi: 10.22099/tesl.2024.51345.3333

dependent on teachers' perception of task complexity and learners' needs (Long & Crookes, 1992; Robinson, 2007).

Task complexity, a characteristic influencing CAF in writing classes, was redefined by Robinson's (2001) triadic componential framework (TCF), which introduced resource dispersing (R-dis) and resource directing (R-dir) elements. While manipulating task complexity via R-dir elements focuses a learner's attention on linguistic forms, R-dis elements disperse the learner's attention on non-linguistic aspects (Jin & Yan, 2024). Consequently, R-dis and R-dir elements have different effects on CAF. The former reduces CAF, whereas the latter increases complexity and accuracy but reduces fluency (Robinson, 2022).

Conceptual improvements in studies on task complexity, including the introduction of the Cognition Hypothesis (CH) or the Trade-off Hypothesis, provide reasonable bases to claim about the effects of task design on language production. However, despite high interest in variables related to task design, such as task conditions and task types on language production and language learning (Abdi Tabari et al., 2024), and despite recent studies in this area of research (e.g., Mehrinejad et al., 2023), the area of how to sequence tasks optimally is considered an unresolved challenge, and it is still open to empirical research.

R-dis and R-dir elements were unitedly used to constitute the SSARC model of task sequencing (TS) (Robinson, 2010). The model suggests that tasks be ordered from simple to complex (S-C) and that R-dis elements be modified before R-dir ones (Lambert & Robinson, 2014). It proposes steps for TS by adapting the learner's interlanguage to the newly learned material. Several studies investigated the model's efficacy in predicting language development (Abdi Tabari & Cho, 2022; Kim, 2023; Malicka, 2020). Although the results provided empirical support for the SSARC model, they did not provide a typical image of its implementation. Allaw and McDonough (2019), for example, suggested that CF be combined with TS so that the results would be representative of the classroom context.

CF is an inseparable part of language classes (Tang & Liu, 2018). CF is classified into several types depending on its focus, namely, comprehensive or focused (Rahimi, 2021). In comprehensive CF, teachers correct all of the students' errors in their writing. On the other hand, in focused CF, teachers merely correct specific errors. According to Ellis et al. (2008), focused CF can be classified as highly or less focused. Highly focused CF addresses only one error type, while less focused CF addresses few preselected errors. This type of focused CF is titled by Lee (2018) as mid-focused feedback and focuses on limited preselected error types.

In addition, direct and indirect CF were two types of CF that marked the error or gave the correct form, respectively (Ngyugen, 2021). Explanation could also be added to the marked part to clarify the error. This type of CF is called metalinguistic feedback (Ellis, 2009) and could be given through error codes (ECs). Based on most language scholars (Benson & Dekeyser, 2019), providing proportionate CF is critical in a writing program (Karim & Nassaji, 2020). CF

can affect the CAF in the target language (Abdi Tabari & Cho, 2022; Chandler, 2003; Rahimi, 2021).

For the CF to be successful, the receivers' current and potential knowledge should be taken into account (Bitchner & Storch, 2016). Through the CF provided, they can notice the gap between their present level and the intended structure and develop their interlanguage subsequently (Kim & Emeliyanova, 2021). In other words, CF provision can scaffold learners (Bitchener & Storch, 2016; Shintani & Aubery, 2016) to combine the target structure into their interlanguage while conducting writing tasks.

By the same token and according to the SSARC model, a learner can adapt the newly learned material to their interlanguage by the gradual accomplishment of a series of tasks (Robinson, 2022). That is, TS could have the merit of accommodating scaffolding for learning opportunities (Abdi Tabari & Cho, 2022). Thus, TS and CF appear to have a similar function.

Scholars investigated different task characteristics on some or all CAF measures. The development of CAF measures, compared to each other, was regarded differently by various models. Skehan's (1998) limited attention capacity model (LAC), for instance, considers CAF development at the cost of each other, whereas Robinson's (2001) CH considers the possibility for simultaneous development in CAF possible.

TS is believed to improve writing performance (Abdi Tabari et al., 2024). Most TS research has probed its effect on oral production (Lambert & Robinson, 2014; Malicka, 2020; Kim, 2023; Ren et al., 2023), and to the best of the researcher's knowledge, three studies (Allaw & McDonough, 2019; Abdi Tabari et al., 2024; Abdi Tabari & Cho, 2022) have scrutinized its effect on writing. Moreover, studies suggest a dearth of research on indirect CF (Tang & Liu, 2018). Consequently, due to the same function of SSARC-referenced TS and CF in scaffolding learning chances and Allaw and McDonoughs' (2019) suggestion of including CF in TS research, it was crucial to investigate the combined effects of TS and CF on writing. As a result, the present study sought to inspect the combined effect of TS and CF on the writing CAF of EFL learners.

TS is regarded as a challenge in task implementation (Ahmadi & Nazari, 2014). In the past, scholars offered models for syllabus development. They offered to order tasks according to their challenge (Prabhu, 1987) and how they attend to learners' needs (Candlin, 1984). Such criteria relied on the teachers' perception (Long & Crookes, 1992; Robinson, 2007) and did not, accordingly, last for long. Later, Baralt et al. (2014) highlighted the absence of a basis for sequencing pedagogic tasks. They called for a theoretical and researchable framework for TS to maximize learning opportunities.

Other scholars suggested that tasks be ordered based on linguistic criteria to trigger awareness of grammatical or vocabulary items (Nunan, 2004). However, the linguistic approach was criticized since it failed to give a criterion for choosing target items (Baralt et al.,

2014; Long, 1991; Long & Crookes, 1992). The problem with such TS proposals was the absence of a theoretical principle for TS. Accordingly, the present study intended to investigate the combined effect of TS (S-C vs. C-S) and indirect CF on writing CAF. The significance of the present study is the fact that it helps language learners understand exactly where their writing problem lies. They receive a hint on the erroneous part. They reflect on their production, try revising, get independent, and gradually come the right way.

Literature Review

The SSARC Model

Tasks are the units of a syllabus in a task-based syllabus design (Baralt et al., 2014). Since syllabus design involves deciding what to teach and in what sequence (Robinson, 2015), developing a practical framework for TS facilitates both language learning and syllabus design. As a result, several studies have investigated the effect of task complexity and TS on language learning variables during the last decade (Abdi Tabari et al., 2024; Kim, 2023; Ren, 2023). For example, Johnson (2023), building on Manchón and William's (2016) view of writing as a tool for language development, critically reviews L2 writing research influenced by TBLT and task complexity, advocating for more studies on its effects on writing development.

Early task-based studies considered subjective criteria for TS (Candlin, 1987; Prabhu, 1987; Skehan, 1998). Later, in his TCF, Robinson (2001) classified variables that could influence the task design (Levkina & Gilabert, 2014) into task complexity, condition, and difficulty. After that, in the CH, Robinson suggested that tasks be ordered based on their cognitive complexity to resemble real-world task demands (Robinson, 2003). His hypothesis illuminated how cognitive and language resources are distributed in language processing (Robinson, 2005). Predicting how CAF measures are affected by task complexity, CH was the basis for task-based studies at that time (Malicka, 2020).

Task complexity concerns the cognitive complexity of a task by introducing R-dis and R-dir elements. Task conditions are about the interaction among the task variables and finally, task difficulty pertains to the factors making a learner consider a task difficult. Task complexity, the main mechanism for task designing and TS (Robinson, 2010), was defined via R-dis and R-dir elements. R-dis and R-dir elements disperse and direct the learner's attention from and to the linguistic forms, respectively (Robinson, 2001), aiming to complexify the task. The task could be, therefore, manipulated to adapt to the learner's interlanguage. R-dir and R-dis elements, along with the claims and goals of CH and TCF, paved the way for the proposal of the SSARC model (2010). The model offers stages for manipulating task features based on R-dir and R-dis elements of TCF so that it could allow the learners' interlanguage to adjust to the target feature progressively (Baralt et al., 2014).

In the first stage of this three-stage model (SSARC), tasks are simple on R-dis and R-dir elements to stabilize and simplify the learner's interlanguage. In step 1, learners get tasks that are simple on both R-dir and R-dis elements (+few elements, + planning time). SS, in the acronym SSARC, stands for the simple and stable state of the interlanguage. In the second stage, tasks are merely simplified on R-dis elements to automatize the interlanguage. In this stage, learners receive complex tasks along R-dis dimensions though simple on R-dir elements (+ few elements, -planning time). In the acronym SSARC, A stands for automatization of their interlanguage and means quick access to it. In the last stage, tasks are simplified on both elements to reconstruct the interlanguage based on the newly learned material. Within this stage, the tasks are complex on R-dir and R-dis elements (–few elements, – planning time). This stage is supposed to restructure the current interlanguage.

Since the proposal of SSARC, studies conducted on TS have displayed a tendency toward exploring its effects on language learning issues (Kim, 2023; Robinson,2015, 2022). As a result, there has recently been a switch from task complexity to TS in research (Jin & Yan, 2024). For example, Mehrinejad et al. (2023) investigated the effects of task complexity and learners' proficiency on students' listening comprehension. The participants were low and highly proficient L2 learners in Iran. The tasks were presented in S-C order based on the SSARC model. Findings revealed significant differences between high and low-proficient participants' performances on the tasks and between highly proficient participants' performance on various tasks. Unlike this study, their study did not include CF. In another study, Abdi Tabari and Cho (2022) investigated the efficiency of the SSARC model in the writing performance of advanced L2 learners. Results showed that the S-C group's structures were more complex and accurate over time than the C-S group. Similar to the present study, their findings support the SSARC model. Their study included one group of tasks with the same complexity level as well.

Other SSARC-referenced studies include Allaw and McDonough's (2019) investigation of the SSARC model's effectiveness in promoting lexical complexity. Participants carried out tasks in S-C and C-S orders. Writing pretests and posttests were taken. Findings revealed that both groups improved in terms of grammatical accuracy, lexical diversity, and fluency. Still, the results obtained by the S-C group were long-lasting. Their study was distinct from this one in that it investigated the long-term effects. Malicka (2020) compared the effects of three tasks in an S-C sequence versus the absence of any other tasks on oral CAF. The findings showed that S-C sequencing resulted in a higher speech rate, enhanced accuracy, improved dysfluency, and increased structural complexity. Her study focused on a different skill from this study. Later, Kim (2023) probed the effect of TS on oral CAF and found conflicting development in CAF measures in various sequencing groups. The non-comparable nature of groups in sequencing, the different number of elements selected from R-dir and R-dis categories, and various planning types may not have allowed a firm conclusion from the study. Finally, Abdi

Tabari et al.'s study (2024) conducted on the relationship between TS, enjoyment, and anxiety revealed an outperformance by the participants in the S-C group. Their design was different from this study since it was correlational.

Indirect Corrective Feedback

Corrective feedback (CF) has been a divisive issue in past decades (Tang & Liu, 2018). Some studies deemed a vital role for it in SLA. Others, however, had incompatible results varying from the total inefficacy of CF (Truscott, 1996) to its effect on specific characteristics of language (Kim & Emeliyanova, 2021). Nevertheless, most researchers unanimously accept the role of CF in second language acquisition research (Ha et al., 2024). In the context of second language writing, despite being considered an essential element in any language program (Karim & Nassaji, 2020), it has been the most divisive issue (Liu & Brown, 2015). CF is an important part of L2 writing programs worldwide (Karim & Nassaji, 2020). Particularly, since CAF measures depict a clear picture of writing development, researchers have gauged CF effects by one or all of the CAF measures (Chandler, 2003; Rahimi, 2021).

CF has been classified by various taxonomies (Ellis, 2009; Lyster & Ranta, 1997) into several types. Several researchers mentioned direct and indirect CF with almost the same definition in their works (Bitchener & Knoch, 2010; Chandler, 2003). The proper form is provided to the learner when giving direct CF, while the wrong form is only somehow marked when providing indirect CF (Ngyugen, 2021). Indirect CF can be provided through a mere identification of the erroneous part or the identification of that part, plus a comment. The latter, which is a widely-used method of CF giving (Kim & Emeliyanove, 2021), could facilitate realizing the error nature (Nassaji, 2015). In a wider scope, indirect CF could enhance L2 acquisition by encouraging self-correction (Ferris, 2007).

Several researchers (e.g., Tang & Liu, 2018) believe that relatively few studies have focused on indirect CF, implying a dearth of research in this regard. Early studies conducted on indirect CF revealed incongruent results. For instance, Ferris and Robbert (2001) found the same effect on accuracy for underlining vs. underlining with ECs. Error coding is a type of CF in which errors are indicated by providing a brief metalinguistic explanation about them. In this type of CF, learners are given the opportunity to perceive the error and to self-correct. Chandler (2003), in another study, found an outperformance by participants who had received underlining in contrast to those who received underlining and ECs.

Similar to the present study, Karim and Nassaji (2020) did a study on CF in writing in which indirect CF was given to the learners by underlining the erroneous part or underlining plus a metalinguistic explanation. The results showed short, non-significant accuracy improvement for indirect and metalinguistic CF.

Similarly, Mallahi and Saadat (2020) compared the effects of CF supplied via Dynamic Assessment (DA) and Formative Assessment (FA) on EFL learners' writing and their ability to transmit the skills learned to new tasks. The DA students were exposed to a model of DA, and the FA group got a sequence of instruction and CF. Results indicated a better effect of the DA group in writing enhancement.

Tang and Liu (2018) examined the effects of indirect coded CF given to the learners with and without affective comments. Results displayed improvement in participants' general writing. However, addressing errors in structure and content simultaneously might have confounded the results.

Complexity, Accuracy, and Fluency (CAF)

Complexity, accuracy, and fluency can be used as a means to provide an image of learners' performance in L2 writing classrooms (Barrot & Agdepa, 2021). They are individually (Fathi & Rahimi, 2020) or collectively (Cho, 2021) considered as measures of language development in task-based studies. The effects of task characteristics on one's language development are depicted by the increase or decline in CAF. Particularly, the language progress made by TS could be measured through CAF (Robinson, 2022).

After Skehan's trade-off hypothesis (2009), there was a tendency to explore the development of CAF measures in interlanguage simultaneously. His hypothesis stated the opposite direction between fluency and the two alternative measures. He considered attentional resources limited in a way that they could not be devoted to all measures at once. Complexity refers to the learner's employing structures that have not been mastered. Accuracy, on the other hand, indicates the level of conformity between the language rules and the learner's interlanguage. Finally, fluency implies the ability to use language spontaneously (Ellis & Barkhuizen, 2005). His hypothesis was a milestone for studies to focus on all CAF measures and test the predictions empirically.

Many studies conducted on TS refused to follow SSARC principles or to consider any counterparts for their focused sequence. Moreover, they did not represent the classroom context. Concerning CF, studies suggest a dearth of research on indirect CF (Tang & Liu, 2018) and claim that CF has and will (Liu & Brown, 2015; Rahimi, 2021) remain a divisive issue in language teaching. Besides, the ECs used in some previous studies were not lucid, and the findings were inconsistent. As a result, a gap was felt for studies investigating the combined effects of TS and CF on writing CAF through rigorous implementation. Accordingly, the present study sought to mend the gap by answering the following research questions.

RQ1: What is the combined effect of task sequencing (S-C vs. C-S) and error codes on writing CAF?

RQ2: What is the combined effect of task sequencing (S-C vs. C-S) and underlining on writing CAF?

Method

This study employs a quasi-experimental design with two treatment groups to examine the combined effects of TS and CF on CAF. The independent variables are TS (S-C and C-S) and indirect CF (underlining and ECs). The dependent variables of the study are complexity, accuracy, and fluency.

Participants

The participants were 113 sophomores studying *English Teaching* at Shahid Ashrafi Esfahani University. The participants were assigned to two classes based on their selected schedules. Their ages varied from 19 to 25, with an average of 21. None of them was bilingual or had an experience of living abroad. Except for 24 participants, all had prior experience teaching English. They met once a week for 90 minutes in the course of *advanced writing*. They had received 13.5 hours of classroom instruction before the treatment. They had been taught punctuation rules, transitions, coherence and cohesion, paragraph and essay structures, various essay types, paraphrasing, summarizing, and British Council writing correction codes (2013). They were found homogeneous based on Oxford Quick Placement Test results. They took a pretest before the treatment.

Materials and Instruments

Following Abdi Tabari and Cho (2022), two sets of tasks were designed conforming to the SSARC model. Both R-dis and R-dir variables of Robinsons' CH were considered in creating tasks. Nonetheless, in order not to confound the results, only one element from each category was selected. Whether to provide planning time was considered as the R-dis and the number of elements, pictures in this case, was considered as the R-dir variable. The first set of tasks asked participants to describe the travel destination in three images. The second set of tasks displayed pictures of activities they do in their everyday life and asked them to write how such activities would be done differently on holidays.

In stage one (stabilize, simplify), 10 minutes were given to the participants to think about the holiday destinations in photos and plan their ideas. The time given for pre-task planning aimed to ease the cognitive load on the participants' working memory and to let them concentrate on various dimensions of each writing task. In addition, the planning time was integrated with a few elements (two pictures of holiday destinations) to customize the tasks according to the first step of the SSARC model.

In the second stage, to promote the automatization of the interlanguage, no pre-task planning time was given to the participants. Thus, the medium version of the task was designed considering R-dis elements (Robinson, 2010). In this regard, participants were supposed to

produce similar concepts as the simple task, however, voiding pre-task planning time led to heavier demands on their working memory. Tasks became complex on R-dis variables by voiding participants of the planning time; though, they continued to be simple on R-dir variables by keeping the same number of elements (two pictures).

In the final stage of the model (reconstruct, complexify) the tasks became complex on both R-dis and R-dir variables by depriving the participants of planning time and increasing the number of elements (four pictures). Participants were asked to describe four travel destinations. Increasing the elements besides removing the planning time caused more task complexity in a way that the participants had to process the images while formulating their ideas and produce more complex language (Robinson, 2010). Table 1 shows the SSARC-referenced task design.

Table1.
SSARC-referenced task design

	SS	A	RC
R-dis	+ Planning	- Planning	- planning
R-dir	+ few elements (two pictures)	+few elements (two pictures)	- few elements (four pictures)

Procedure

The designed tasks were piloted on 13 upper-intermediate language learners to get a general understanding of the challenges of the implementation, the appropriate planning time, and the desirable time on tasks.

The participants signed a consent form, and then 113 participants were assigned to one of the groups with 56 and 57 participants, namely the S-C and the C-S groups.

The participants took a pretest before the treatment. They were asked to write about their favorite travel destination. After about 20 minutes, most participants had completed their texts. Then, they were assigned to two classes 56 and 57. In this study, the participants were needed to do three tasks, in varying orders. The time of each task for each version was based on the results of a pilot study.

A few weeks later, after receiving some instruction, they received the intervention. In doing so, the first group was given both sets of tasks in S-C and the second group in the converse order. The participants received the three versions of each task three days a week, with a time interval of one day. It took three weeks for them to do various versions of the tasks. It took three sessions for students to accomplish both sets of tasks. After doing the first set of tasks, students delivered them to the researcher to receive CF. As ECs were a commonly agreed-upon method (Liu & Brown, 2015), the researcher decided to opt for them as one way of giving CF. Accordingly, she underlined the erroneous parts and inserted explanations using the British Council ECs above them. For the second CF type to resemble the most to the first one, underlining was selected. Participants of each group were offered ECs in the first set of tasks

and underlining for the second. The researcher gathered the tasks of each group separately, read them meticulously, and inserted CF.

The following points were checked, and any violations from the right form were considered errors: punctuation and spelling, tense, verb correct usage, verb aspect, sentence voice, the right form of comparative and superlative adjectives, word order, relative clauses, appropriate prepositions, subject-verb agreement and the correct use of nouns. However, tense inconsistency, dangling, inversion and the accurate use of relative pronouns based on defining/non-defining clauses were ignored, thanks to the proficiency level of students. Additionally, the researcher got the hand-written tasks typed using Google Lens and checked them using the premium version of *Grammarly*.

Participants received their commented tasks in the following session. They had received instruction on ECs in advance. They were asked to write the revised part next to the erroneous production. The second set of tasks was given to each group in the same sessions. Following the first time of task implementation, tasks were given to each group in the same order as their first implementation. After receiving and doing tasks, students received CF, this time by getting the erroneous part underlined without any explanations. The process of CF giving was done the same way as it was done before, and participants were asked to revise their tasks based on the provided CF by writing the right form above the underlined part and leaving the unperceived errors unchanged. One week later, all participants took a posttest asking them to write about their best travel experience. Figure 1 illustrates the implementation procedure.

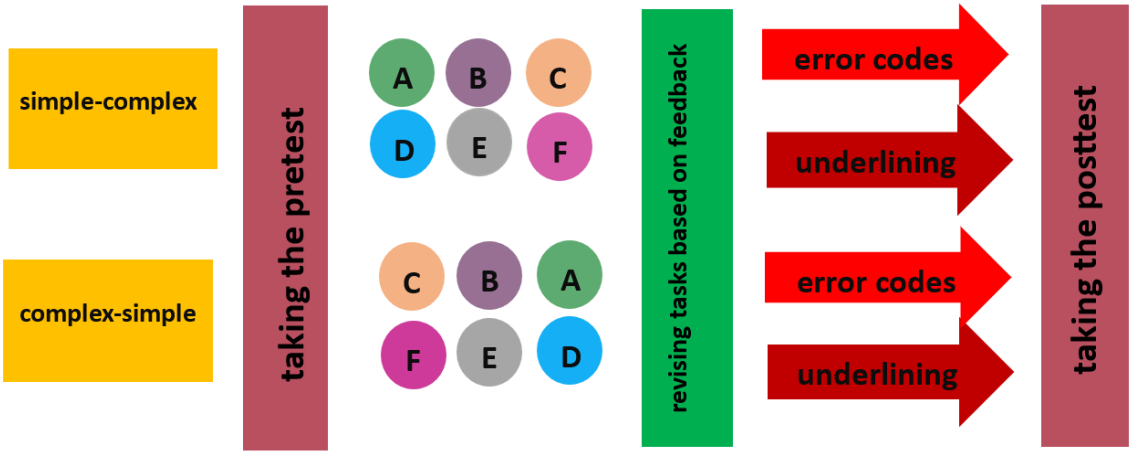

Figure 1. *The Implementation Procedure*

CAF Measures

Fathi and Rahimi's (2022) measure was used to calculate CAF. Figure 2, adapted from their study, displays the definition of the measures.

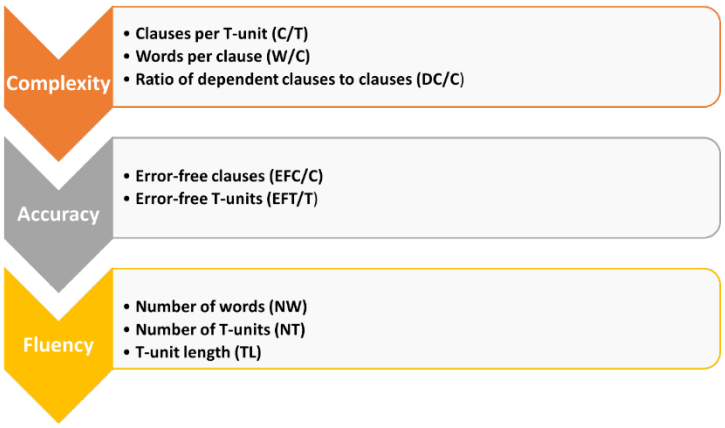

Figure 2. *List of employed measures for writing CAF*

This figure is adapted from Fathi and Rahimi's (2022) study.

To manually calculate CAF measures, two English teachers who had taught English for about five years read the texts in students' pretest and posttest, counted the word numbers, clauses, and T-units, and reckoned the ratios, percentages, and the final measures. Furthermore, the researcher used Chat GPT version 3.5. Finally, the researcher compared the measures of CAF calculated by Chat GPT and those by the English teachers. The inconsistent ones were manually reckoned by her again and the obtained number was considered as the final measure. Moreover, an English teacher with eight years of experience approved the task's intended purpose, and the results were checked for inter-rater consistency. In addition, a PhD holder of English language Teaching checked the topics about which the participants were supposed to write.

Results

Kolmogorov-Smirnov tests were run to assess the normality of the CAF score distributions. The results revealed that the scores were normally distributed for all sub-scores, as the Asymp. Sig. levels were all higher than 0.05, D (113), $p = 0.005$. Accordingly, the prerequisites for running parametric tests were met. The first RQ of the study was about the combined impacts of TS and ECs on writing CAF. Table 2 compares the mean scores of the two groups in terms of their writing complexity.

Table 2.

Two-way MANOVA for Writing Complexity (Pretest)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	CT	.791[a]	1	.791	2.359	.127
	WC	2.550[b]	1	2.550	.555	.458
	DCC	.001[c]	1	.001	.690	.408
Intercept	CT	238.242	1	238.242	711.041	.000
	WC	9203.647	1	9203.647	2.002E3	.000
	DCC	10.437	1	10.437	6.878E3	.000
TS and ECs complexity	CT	.791	1	.791	2.359	.127
	WC	2.550	1	2.550	.555	.458
	DCC	.001	1	.001	.690	.408
Error	CT	37.192	111	.335		
	WC	510.371	111	4.598		
	DCC	.168	111	.002		
Total	CT	276.000	113			
	WC	9720.000	113			
	DCC	10.605	113			
Corrected Total	CT	37.982	112			
	WC	512.920	112			
	DCC	.169	112			

As shown in Table 2, no significant differences were found between the groups' writing complexity at the start of the study ($p > .05$).

Table 3.

Two-way MANOVA for Writing Accuracy (Pretest)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	EFCC	.011[a]	1	.011	2.757	.100
	EFTT	.002[b]	1	.002	.748	.389
Intercept	EFCC	70.565	1	70.565	1.816E4	.000
	EFTT	30.205	1	30.205	1.122E4	.000
TS and ECs pretest	EFCC	.011	1	.011	2.757	.100
	EFTT	.002	1	.002	.748	.389
Error	EFCC	.431	111	.004		
	EFTT	.299	111	.003		
Total	EFCC	70.997	113			
	EFTT	30.503	113			
Corrected Total	EFCC	.442	112			
	EFTT	.301	112			

The results presented in Table 3 also reveal that no significant difference between the two groups' writing accuracy at the beginning of the study ($p > .05$).

Table 4.

Two-way MANOVA for Writing Fluency (Pretest)

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	NW	72.195[a]	1	72.195	.590	.444
	NT	2.311[b]	1	2.311	.847	.359
	TUL	.067[c]	1	.067	.047	.829
Intercept	NW	9092525.824	1	9092525.824	7.430E4	.000
	NT	40103.338	1	40103.338	1.470E4	.000
	TUL	26299.642	1	26299.642	1.854E4	.000
TS and ECs pretest	NW	72.195	1	72.195	.590	.444
	NT	2.311	1	2.311	.847	.359
	TUL	.067	1	.067	.047	.829
Error	NW	13584.336	111	122.381		
	NT	302.822	111	2.728		
	TUL	157.491	111	1.419		
Total	NW	9107348.000	113			
	NT	40417.000	113			
	TUL	26460.000	113			
Corrected Total	NW	13656.531	112			
	NT	305.133	112			
	TUL	157.558	112			

Moreover, according to the figures presented in Table 4, there was no significant difference between the two groups' writing fluency ($p > 0.05$). To investigate the possible combined effects of TS and ECs, after the treatment, the gathered data from writing tests were exposed to two-way MANOVAs. Table 5, Table 6, and Table 7 present the results.

Table 5.

Two-way MANOVA for Writing Complexity (Posttest, TS & ECs)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	CT	11.045[a]	1	11.045	34.209	.000
	WC	12.052[b]	1	12.052	4.814	.030
	DCC	.087[c]	1	.087	45.608	.000
Intercept	CT	315.045	1	315.045	975.737	.000
	WC	11513.574	1	11513.574	4.599E3	.000
	DCC	12.143	1	12.143	6.331E3	.000
TS and ECs complexity	CT	11.045	1	11.045	34.209	.000
	WC	12.052	1	12.052	4.814	.030
	DCC	.087	1	.087	45.608	.000

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Error	CT	35.840	111	.323		
	WC	277.877	111	2.503		
	DCC	.213	111	.002		
Total	CT	363.000	113			
	WC	11811.000	113			
	DCC	12.463	113			
Corrected Total	CT	46.885	112			
	WC	289.929	112			
	DCC	.300	112			

Table 5 reveals that the group that was exposed to S-C tasks along with ECs performed significantly ($p < .05$) better than the other group that received the tasks from complex to simple order.

Table 6.

Two-way MANOVA for Writing Accuracy (Posttest, TS & ECs)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	EFCC	1.783a	1	1.783	426.889	.000
	EFTT	1.809b	1	1.809	707.364	.000
Intercept	EFCC	55.891	1	55.891	1.338E4	.000
	EFTT	50.954	1	50.954	1.992E4	.000
TS and ECs posttest	EFCC	1.783	1	1.783	426.889	.000
	EFTT	1.809	1	1.809	707.364	.000
Error	EFCC	.464	111	.004		
	EFTT	.284	111	.003		
Total	EFCC	58.319	113			
	EFTT	53.222	113			
Corrected Total	EFCC	2.247	112			
	EFTT	2.093	112			

Table 6 also revealed that the group that received tasks from S-C along with ECs outperformed the other group in terms of writing accuracy ($p < .05$).

Table 7.

Two-way MANOVA for Writing Fluency (Posttest, TS & ECs)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	NW	2560.978[a]	1	2560.978	10.508	.002
	NT	295.899[b]	1	295.899	111.511	.000
	TUL	38.614[c]	1	38.614	13.958	.000
Intercept	NW	8923714.606	1	8923714.606	3.662E4	.000
	NT	41376.359	1	41376.359	1.559E4	.000
	TUL	28715.428	1	28715.428	1.038E4	.000
TS and ECs posttest	NW	2560.978	1	2560.978	10.508	.002
	NT	295.899	1	295.899	111.511	.000
	TUL	38.614	1	38.614	13.958	.000
Error	NW	27052.456	111	243.716		
	NT	294.544	111	2.654		
	TUL	307.068	111	2.766		
Total	NW	8956703.000	113			
	NT	42032.000	113			
	TUL	29082.000	113			
Corrected Total	NW	29613.434	112			
	NT	590.442	112			
	TUL	345.681	112			

The results presented in Table 7 show significant differences between the writing fluency mean scores when the participants were exposed to ECs with different task orders, with the S-C group outperforming the C-S group. It was found that when tasks were presented in S-C along with ECs, EFL learners' writing CAF significantly improved.

The second research question investigated the effects of TS and underlining on writing CAF. As noted earlier, at the outset of the study, there was no significant difference between the two groups in terms of their writing CAF. After the treatment, the data from the two groups were exposed to two-way MANOVAs. Table 8, Table 9, and Table 10 present the results.

Table 8.

Two-way MANOVA for Writing Complexity (Posttest, TS & Underlining)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	CT	.082[a]	1	.082	.369	.545
	WC	.189[b]	1	.189	.082	.775
	DCC	.001[c]	1	.001	.693	.407
Intercept	CT	432.082	1	432.082	1.942E3	.000
	WC	12174.561	1	12174.561	5.311E3	.000
	DCC	14.002	1	14.002	6.523E3	.000

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
TS and underlining posttest	CT	.082	1	.082	.369	.545
	WC	.189	1	.189	.082	.775
	DCC	.001	1	.001	.693	.407
Error	CT	24.697	111	.222		
	WC	254.448	111	2.292		
	DCC	.238	111	.002		
Total	CT	457.000	113			
	WC	12431.000	113			
	DCC	14.245	113			
Corrected Total	CT	24.779	112			
	WC	254.637	112			
	DCC	.240	112			

Table 8 reveals no significant difference ($p > .05$) between the performance of the underlining group in their writing complexity.

Table 9.

Two-way MANOVA for Writing Accuracy (Posttest, TS & Underlining)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	EFC	.001[a]	1	.001	.191	.663
	EFT	.017[b]	1	.017	2.654	.106
Intercept	EFC	77.023	1	77.023	1.187E4	.000
	EFT	36.061	1	36.061	5.637E3	.000
TS and underlining posttest	EFC	.001	1	.001	.191	.663
	EFT	.017	1	.017	2.654	.106
Error	EFC	.721	111	.006		
	EFT	.710	111	.006		
Total	EFC	77.756	113			
	EFT	36.805	113			
Corrected Total	EFC	.722	112			
	EFT	.727	112			

According to the figures presented in Table 9, no significant difference ($p > .05$) was observed between the groups that received underlining as a type of CF in writing accuracy.

Table 10.

Two-way MANOVA for Writing Fluency (Posttest, TS & Underlining)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	EFC	.001[a]	1	.001	.191	.663
	EFT	.017[b]	1	.017	2.654	.106
Intercept	EFC	77.023	1	77.023	1.187E4	.000
	EFT	36.061	1	36.061	5.637E3	.000
TS and underlining posttest	EFC	.001	1	.001	.191	.663
	EFT	.017	1	.017	2.654	.106
Error	EFC	.721	111	.006		
	EFT	.710	111	.006		
Total	EFC	77.756	113			
	EFT	36.805	113			
Corrected Total	EFC	.722	112			
	EFT	.727	112			

According to the figures presented in Table 10, when the participants were exposed to tasks in different orders along with underlining, no significant difference was observed between their performance in writing fluency. Finally, it was observed that when tasks are presented in two different orders along with underlining as a CF type, the participants' performance did not improve in writing CAF.

Discussion

The current study investigated the combined effects of TS (S-C and C-S) and CF (ECs and underlining) on EFL learners' writing CAF. As shown in the results section, the findings showed that S-C sequencing could improve participants' writing CAF when combined with ECs. However, the findings showed no significant improvement in both sequences when combined with underlining.

The first research question of the study examined the combined effects of TS and ECs on writing CAF. The results revealed an outperformance by the participants in the posttest compared with the pretest. This finding might be attributed to participants' getting prepared through such sequencing. That is, the elements of the early task might have prepared the participants for the subsequent ones. In other words, it has provided them with a rehearsal opportunity (Allaw & McDonough, 2019). Furthermore, the initial task was the simplest, requiring the least cognitive load. In this way, the participants could perform a demo of the future tasks. Participants' having to write about a few elements allows them to gain experience by dispelling their fear of a challenge in the rest of the tasks (Robinson & Gilabert, 2007).

The findings supplied empirical evidence supporting the theoretical principles of the SSARC model about the effective role of S-C task sequencing for writing. As the findings of

the present study and the SSARC model suggest, sequencing tasks from S-C gives the learners scaffolded chances for rehearsal, and this allows L2 learners to consider target structures more deeply, revise their production, notice those structures, and make their writing more complex.

In addition, the planning time provided at the first task may have given the participants a chance to brainstorm about the topic. Participants tasked with writing about the same concept using more elements likely employed more complex structures to avoid repetition, explaining the increased complexity observed in the posttest.

In addition, increasing task complexity by eliminating the planning time and boosting the elements' number forces L2 writers to employ target structures, pay attention to problematic areas, and expand their linguistic resources to produce more accurate and more complex writing.

Generally, the outcomes of the present research confirm the SSARC model, according to which increasing cognitive complexity along the R-dir elements attracts more attention to form-function links, improving interlanguage development (Robinson, 2010). Moreover, the findings provide empirical evidence for the principles of TS in which S-C ordering leads to deeper mental processing and helps in shaping certain schemas for long-term transmission of content or procedures in writing performance (Abdi Tabari & Miller, 2021).

Besides, when the complexity of the tasks was increased, L2 learners' mental preparedness was reduced. Considering the SSARC model of TS, the S-C sequencing could have functioned as a scaffolding.

Another possible explanation for the higher posttest accuracy is that the sequencing enabled participants to revise errors using the provided CF, leveraging their L2 resources to produce correct forms. (Ren et al., 2023). This could be explained by Gilabert (2007) who found that enhancing task complexity culminates in more error correction. The finding was consistent with Ren et al.' study (2023) which displayed more self-repair in S-C sequencing than in C-S.

CF could scaffold participants in doing writing tasks (Shintani & Aubrey, 2016). In the same way, sequencing tasks from S-C gives participants scaffolding opportunities to keep their attention on the target structure (Abdi Tabari, 2022). Accordingly, the combined effect of TS and CF was supposed to boost writing through enhanced scaffolding opportunities. Our results seemed to follow this claim and the main claim of the SSARC model on the scaffolding chances provided through S-C sequencing. Our results provide empirical evidence in support of the benefits of ordering tasks from S-C with CF provision by implying that the participants become more mindful of their production. The findings also corroborate Ren et al.'s (2023) study that such sequencing facilitates learners' monitoring of their language.

Our results were in agreement with several studies previously conducted on TS or CF (Abdi Tabari & Cho, 2022; Allaw & McDonough, 2019; Kim & Emeliyanova, 2021). Still, the study has minor differences in the amount of progress, which could be due to the difference in

the definitions of CAF measures, namely the more detailed aspect of CAF like lexical complexity or grammatical accuracy or due to the different nature of writing and speaking.

The findings support the study by Abdi Tabari et al. (2024) of the effect of TS on L2 writing of EFL learners. The results are also in line with the study by Mehrinejad et al. (2023), which investigated the effects of task complexity along with learners' proficiency on undergraduate students' listening comprehension. Findings revealed significant differences between high and low-proficient participants' performances on these three tasks and between high-proficient participants' performances on various tasks.

In addition, the results are comparable with the study by Johnson (2023), which investigated the efficiency of the SSARC model of TS in the L2 writing performance of advanced L2 learners of English and showed that the S-C group had higher accuracy and syntactic complexity over time.

The second research question explored the combined effect of TS and underlining on writing CAF. Results showed no significant effect in this regard. This might have resulted from participants' losing interest in the second or the third task of each set (Ren et al., 2023). The second and third tasks of each set seemed possibly mundane to them due to the lesser level of challenge and enjoying the planning time. The lower complexity at participants' posttest could also be because participants tend to make more complicated structures when doing complex tasks for successful communication (Robinson, 2011) and, possibly, since the most complex task had been placed at the beginning of the set, the number of produced complex structures declined in succeeding tasks.

We expected that combining ECs with such sequencing would result in higher accuracy as it did with the previous group. Unexpectedly, participants' accuracy did not improve in the posttest. Moreover, most of the inserted ECs were not rectified by the participants in this group. Since the participants made the most mistakes in the complex task, which was the first task of the set, seeing the high number of underlined or error-coded parts could make them unconfident in revising the erroneous part. Another explanation could be that the second and the third tasks seemed mundane to the learners and they might have lost interest in performing them right. The possible confusion created by this method of CF might have influenced the participant's performance in the posttest, too.

Conclusion

The study aimed to examine the effects of TS and CF (ECs and underlining) on EFL learners' writing CAF. The findings exhibited that sequencing tasks from S-C, along with providing learners with ECs, can help EFL learners improve their writing CAF.

Based on the findings, a cognitive model of task complexity can serve as a useful guide for L2 teachers to manage the complexity levels of tasks in writing classes. This study contributes to the literature by highlighting the importance of including CF in language classes. The study has implications for the inclusion of CF by enabling teachers to implement the SSARC model based on learners' tastes. For this purpose, the teacher can tailor both classroom writing tasks and homework tasks, depending on learners' needs and proficiency. That is, SSARCs' adaptability to different R-dis or R-dir elements would allow the teacher to select the elements according to learners' interests and, therefore, adapt classroom tasks to learners' preferences. The study also promotes learner autonomy, as it encourages learners to identify errors, utilize their language resources (Allaw & McDonough, 2019), and independently revise their mistakes. This way, learners would take responsibility for their learning and become independent.

In post method days, language teachers do not work with predetermined teaching materials and they customize the material based on the learners' needs (Fathi & Rahimi, 2022). Besides, effective tailoring of teaching materials entails proper sequencing. Furthermore, in many language classes tasks, activities, and exercises are interchangeably used. Accordingly, the study has implications for English teachers, syllabus designers, and materials developers.

Moreover, the theoretical implication of the present research is that it can contribute to a better understanding of the concepts of task complexity in EFL contexts. In addition, the results can be useful to practitioners for manipulating existing writing tasks. Robinson's (2010) ideas about task complexity cannot be reduced to the writing domain alone. The ideas can be employed in other domains of L2 skills.

The study had a number of limitations. First, the ECs could not address all mistakes clearly. For instance, errors marked as *silly error* suffered from obscurity. In addition, a single error could be marked through various codes. A tense mistake, for example, could be addressed by the *wrong word, wrong time, and wrong form*. Second, the number of words without any proportional scale to measure against, by which a longer text under any circumstance would seem fluent, might not have been a representative fluency index. Third, selecting nearly the same theme for all tasks, along with the pretest and the posttest could make participants bored and affect their performance.

For the findings of the present research to be generalizable, it is suggested that future studies include more than one task for each stage of the SSARC model and record participants' performance from each stage of SSARC to another. This would allow the researchers to conclude more confidently on participants' performance at each stage. The results would also

reflect the sole effect of R-dis and R-dir elements on participants' performance respectively. It is recommended to use think-aloud protocol and stimulus recall (Levkina & Gilabert, 2014) to explore if the increased task complexity through SSARC conforms to participants' perceived task complexity by its intended aims.

Acknowledgments

The first author is thankful to Dr. Carolyn Blume and her team for allowing her to present the study, aiding data analysis, and giving precise comments.

We would like to thank the editorial team of TESL Quarterly for granting us the opportunity to submit and publish the current synthesis. We would also like to express our appreciation to the anonymous reviewers for their careful, detailed reading of our manuscript and their many insightful comments and suggestions.

Declaration of conflicting interests

The authors declare no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

Funding

The Bildungsengel program from Dortmund Technical University funded the first author on her Sabbatical leave to conduct the study.

References

Abdi Tabari, M., & Cho, M. (2022). Task sequencing and L2 writing development: Exploring the SSARC model of pedagogic task sequencing. *Language Teaching Research*, *0*(0), 16-36. https://doi.org/10.1177/13621688221090922

Abdi Tabari, M., Khajavy, G. H., & Goetze, J. (2024). Mapping the interactions between task sequencing, anxiety, and enjoyment in L2 writing development. *Journal of Second Language Writing*, *65*(2024), 101-116. https://doi.org/10.1016/j.jslw.2024.101116

Abdi Tabari, M., Wang, Y. & Miller, M. (2024). Understanding the SSARC model of task sequencing: Assessing L2 writing development. *Assessing Writing, 62*(1), 23-45. https://doi.org/10.1016/j.asw.2024.100893.

Ahmadi, H., & Nazari, O. (2014). Grading and sequencing tasks in task-based syllabus: A critical look at criterion selection. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 8*(11), 337-334.

Allaw, E., & McDonough, K. (2019). The effect of task sequencing on second language written lexical complexity, accuracy, and fluency. *System*, *85*(2019), 102-104. https://doi.org/ 10. 1016/j. system. 2019.06.008

Baralt M., Gilabert R., Robinson P. (2014). An introduction to theory and research in task sequencing and instructed second language learning. In Baralt M., Gilabert R., Robinson P. (Eds.), *Task sequencing and instructed second language learning* (pp. 1–37). Bloomsbury.

Barrot, J. S., & Agdeppa, J. Y. (2021). Complexity, accuracy, and fluency as indices of college-level L2 writers' proficiency. *Assessing Writing*, *47*(2021), 100510. https://doi.org/ 10.1016/j. asw. 2020. 100510

Benson, S., & DeKeyser, R. (2019). Effects of written corrective feedback and language aptitude on verb tense accuracy. *Language Teaching Research*, *23*(6), 702-726. https://doi.org/ 10. 1177/ 1362 168818770921

Bitchener, J., & Knoch, U. (2010). Raising the linguistic accuracy level of advanced L2 writers with written corrective feedback. *Journal of Second Language Writing*, *19*(4), 207-217. https://doi.org/10.1016/j.jslw.2010.10.002

Bitchener, J., & Storch, N. (2016). *Written corrective feedback for L2 development* (Vol. 96). Multilingual Matters.

Candlin, C. N. (1984). Syllabus design as a critical process. In C. J. Brumfit (Ed.), *General English syllabus design* (pp. 29-40). Oxford: Pergamon.

Candlin, C. (1987). Toward task-based learning. In C. Candlin & D. Murphy (Eds.), *Language learning tasks* (pp. 5-22). Prentice-Hall.

Chandler, J. (2003). The efficacy of various kinds of error feedback for improvement in the accuracy and fluency of L2 student writing. *Journal of Second Language Writing*, *12*(3), 267-296. https://doi.org/10.1016/S1060-3743(03)00038-9

Cho, M. (2021). English Learners' Orientations Towards Complexity, Accuracy, and Fluency: Learner Factors and L2 Writing Performance. *Studies in English Education*, *26*(4), 507-531.

Ellis, R. (2003). *Task-based language learning and teaching*. OUP

Ellis, R. (2009). A typology of written corrective feedback types. *ELT Journal*, *63*(2), 97-107. https://doi.org/10.1093/elt/ccn023

Ellis, R., & Barkhuizen, G. P. (2005). *Analyzing Learner Language*. Oxford University Press.

Ellis, R., Sheen, Y., Murakami, M., & Takashima, H. (2008). The effects of focused and unfocused written corrective feedback in an English as a foreign language context. *System*, *36*(3), 353-371. https://doi.org/10.1016/j.system.2008.02.001

Fathi, J., & Rahimi, M. (2022). Examining the impact of flipped classroom on writing complexity, accuracy, and fluency: A case of EFL students. *Computer Assisted Language Learning*, *35*(7), 1668-1706. https://doi.org/10.1080/09588221.2020.1825097

Ferris, D. R. (2007). Preparing teachers to respond to student writing. *Journal of Second Language Writing*, *16*(3), 165–193. doi:10.1016/j.jslw.2007.07.003

Ferris, D., & Roberts, B. (2001). Error feedback in L2 writing classes: How explicit does it need to be? *Journal of Second Language Writing*, *10*(3), 161-184. https://doi.org/10.1016/S1060-3743(01)00039-X

Fu, M., & Li, S. (2022). The effects of immediate and delayed corrective feedback on L2
development. *Studies in Second Language Acquisition*, *44*(1), 2-34. https://doi.org/ 10.1017 /S027 2263120000388

Gilabert, R. (2007). Effects of manipulating task complexity on self-repairs during L2 oral production. *International Review of Applied Linguistics in Language Teaching*, *45*(3), 215-240. https://doi.org/10.1515/iral.2007.010

Ha, X. V., Murray, J. C., & Reynolds, B. L. (2024). "Without the video I wouldn't have known": An experienced EFL teacher learning to provide oral corrective feedback. *International Journal of Applied Linguistics*, *34*(3) 1148-1151 https://doi.org/10.1111/ijal.12556

Johnson, M. D. (2024). Task-based language teaching and L2 writing: The performance- development divide. *Language Teaching Research Quarterly, 39*, 217-230. https://doi.org/10.32038/ltrq. 2024.39.15

Jin, C., & Yan, J. (2024). The effects of task complexity and task sequencing on L2 performance: a systematic review. *The Language Learning Journal*, 1-28. https://doi.org/ 10.1080/ 09571736.2024.2345911

Karim, K., & Nassaji, H. (2020). The revision and transfer effects of direct and indirect comprehensive corrective feedback on ESL students' writing. *Language Teaching Research*, *24*(4), 519-539. https://doi.org/10.1177/1362168818802469

Kim, N. (2023). The effects of different task sequences on novice L2 learners' oral performance in the classroom. *Language Teaching Research*, *27*(2), 415-440. https://doi.org/10.1177 /1362 1688 20 937548

Kim, Y., & Emeliyanova, L. (2021). The effects of written corrective feedback on the accuracy of L2 writing: Comparing collaborative and individual revision behavior. *Language Teaching Research*, *25*(2), 234-255. https://doi.org/10.1177/1362168819831406

Lambert, C., & Robinson, P. (2014). Learning to perform narrative tasks: A semester-long classroom study of L2 task sequencing effects. *Task Sequencing and Instructed Second Language Learning*, 207-230.

Lee, I. (2018). Teachers' frequently asked questions about focused written corrective feedback. *TESOL Journal, 10*(3), 43-61. https://doi.org/10.1002/tesj.427

Levkina, M., & Gilabert, R. (2014). Task sequencing in the L2 development of spatial expressions. *Task Sequencing and Instructed Second Language Learning*, 37-70.

Liu, Q., & Brown, D. (2015). Methodological synthesis of research on the effectiveness of corrective feedback in L2 writing. *Journal of Second Language Writing*, *30*(2015), 66-81. https://doi.org/10.1016 /j.jslw.2015.08.011

Long, M. H. (1991). Focus on form: A design feature in language teaching methodology. *Foreign language Research in Cross-Cultural Perspective, 2*(3) 239-252.

Long, M. H., & Crookes, G. (1992). Three approaches to task-based syllabus design. *TESOL Quarterly, 26*(1), 27-56.

Lyster, R., & Ranta, L. (1997). Corrective feedback and learner uptake: Negotiation of form in communicative classrooms. *Studies in second language acquisition*, *19*(1), 37-66. https://doi.org/10.1017/S0272263197001034

Malicka, A. (2020). The role of task sequencing in fluency, accuracy, and complexity: Investigating the SSARC model of pedagogic task sequencing. *Language Teaching Research*, *24*(5), 642-665. https://doi.org/10.1177/1362168818813668

Manuel, R., (2022). Integrating project-based learning, Task-based Language Teaching Approach and Youtube in the ESP class: A study on students' motivation. *Teaching English with Technology, 22*(1), 62-81.

Nassaji, H. (2015). The interactional feedback dimension in instructed second language learning. *Language Teaching Research, 19*, 129-132. https://doi. org/10.1177/1362168815572747

Prabhu, N. S. (1987). *Second Language Pedagogy*. Oxford: Oxford University Press.

Rahimi, M. (2021). A comparative study of the impact of focused vs. comprehensive corrective feedback and revision on ESL learners' writing accuracy and quality. *Language Teaching Research*, *25*(5), 687-710. https://doi.org/10.1177/1362168819879182

Ren, W., Wu, Y., & Peng, Y. (2023). Effects of task complexity, task sequence, and interlocutor familiarity on Chinese EFL learners' self-repair in synchronous online interaction. *Language Teaching Research*. https://doi.org/ 10.1177 /13621688231176066

Robinson, P. (2001). Task complexity, task difficulty, and task production: Exploring interactions in a componential framework. *Applied linguistics*, *22*(1), 27-57. https://doi.org /10. 1093/ applin /22. 1.27

Robinson, P. (2003). The cognitive hypothesis, task design, and adult task-based language learning. *Second Language Studies, 21*, 45-107

Robinson, P. (2005). Cognitive complexity and task sequencing: Studies in a componential framework for second language task design. *International Review of Applied Linguistics in Language Teaching, 43,* 1–32 https://doi.org/10.1515/iral.2005.43.1.1

Robinson, P. (2007a). Task complexity, theory of mind, and intentional reasoning: Effects on L2 speech production, interaction, uptake and perceptions of task difficulty. *International Review of Applied Linguistics in Language Teaching, 45*, 193-213.

Robinson P. (2010). Situating and distributing cognition across task demands: The SSARC model of pedagogic task sequencing. In Pütz M., Sicola L. (Eds.), *Cognitive processing in second language acquisition: Inside the learner's mind* (pp. 243–268). John Benjamins.

Robinson, P. (2011). Task-based language learning: A review of issues. *Language Learning, 61*, 1-36. https://doi.org/10.1111/j.1467-9922.2011.00641.x

Robinson, P. (2015). The Cognition Hypothesis, second language task demands, and the SSARC model of pedagogic task sequencing. In *Domains and directions in the development of TBLT* (pp. 87-122). John Benjamins.

Robinson, P. (2022). The cognition hypothesis, the triadic componential framework and the SSARC model: An instructional design theory of pedagogic task sequencing. *The Cambridge handbook of task-based language teaching*, 205-225.

Robinson, P., & Gilabert, R. (2007). Task complexity, the Cognition Hypothesis and second language learning and performance. *International Review of Applied Linguistics in Language Teaching, 45,* 161-176. https://doi.org/10.1515/iral.2007.007

Shintani, N., & Aubrey, S. (2016). The effectiveness of synchronous and asynchronous written corrective feedback on grammatical accuracy in a computer-mediated environment. *The Modern Language Journal*, *100*(1), 296-319. https://doi.org/10.1111/modl.12317

Skehan, P. (1998). *A cognitive approach to language learning*. Oxford University Press.

Skehan, P. (2009). Modeling second language performance: Integrating complexity, accuracy, fluency, and lexis. *Applied linguistics*, *30*(4), 510-532. https://doi.org/10.1093/applin/ amp047

Tang, C., & Liu, Y. T. (2018). Effects of indirect coded corrective feedback with and without short affective teacher comments on L2 writing performance, learner uptake and motivation. *Assessing Writing*, *35*, 26-40. https://doi.org/10.1016/j.asw.2017.12.002

Truscott, J. (1996). The case against grammar correction in L2 writing classes. *Language learning*, *46*(2), 327-369. https://doi.org/10.1111/j.1467-1770.1996.tb01238.x

Writing Correction Code. (2013). https://www.teachingenglish.org.uk/teaching- resources/teaching-secondary/activities/beginner-a1/writing-correction-code