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Do the benefits of learning to write a compare-contrast text transfer to other types of writing task? Analysing the effects of strategy-focused instruction

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Título: ¿Es posible transferir el aprendizaje de un texto de comparación-contraste a otro tipo de tareas? Análisis de los efectos de la instrucción estratégica

Resumen: El programa de Instrucción de la Autorregulación Cognitiva (CSRI) se basa en la instrucción centrada en la estrategia e incluye tres componentes para la mejora del producto textual (enseñanza directa, modelado y práctica entre iguales). Se plantearon como objetivos analizar si la instrucción con el programa CSRI en un género textual (texto de comparación) conducía a la transferencia espontánea en el producto textual (mejor coherencia, estructura y calidad) en un género no instruido (texto de opinión); y examinar si el orden de los componentes instruccionales presentaba algún efecto. Participaron 126 estudiantes de cuarto de educación primaria que fueron asignados a una de las dos condiciones experimentales en las que se aplicaba el programa CSRI (con diferente secuencia de los componentes instructivos), o a una condición de control en la que se seguía la enseñanza tradicional. Los resultados reflejaron que las dos secuencias de instrucción del programa CSRI mostraban beneficios en la estructura y coherencia del producto textual de los estudiantes en el posttest pero no 8 meses después. Para que los alumnos sean capaces de transferir adecuadamente lo aprendido a géneros textuales no instruidos, necesitan que los profesores les enseñen cómo hacerlo eficazmente.
Palabras clave: Enseñanza de la escritura. Enseñanza centrada en estrategias. Transferencia. Educación Primaria.

Abstracts: Cognitive Self-Regulation Instruction (CSRI) program is a strategy-focused instruction with three instructional components for improving students' writing product (direct teaching, modelling, and peer-practice). The present study aimed to explore whether the CSRI program leads to spontaneous transfer, improving the writing product (in terms of quality, structure, and text coherence) of an uninstructed genre (opinion text); and to examine whether the order in which the instructional components were implemented had an effect. A total of 126 students in their 4th year of primary school participated in the study. They were randomly assigned to one of two experimental conditions which received the CSRI but differed in the order the instructional components were delivered, or to a control condition which followed the traditional teaching approach. Our findings show that both CSRI sequences produced benefits in terms of greater structure and coherence of the writing product in the opinion text at post-test but not 8 months after the intervention. In consequence, for students to be able to adequately transfer strategies to uninstructed text genres, they need teachers to teach them how to do it effectively.
Keywords: Writing instruction. Strategy-focused instruction. Transfer. Primary school.

Introduction

Learning to write is a complex task that demands mastery of transcription skills (e.g., spelling, handwriting, and sentence construction), and the deployment of self-regulatory skills such as planning, self-evaluation, and self-monitoring in order to produce quality writing (Graham, 2018; Klein et al., 2022). The cognitive complexity of writing is a major problem for young writers who have yet to automate their transcription abilities because they need to deal with several problems (content, argumentation—what and to say to the reader and how) while also focusing their attention on transcription skills such as spelling and paragraphing (Rijlaarsdam et al., 2011). To do all these activities simultaneously causes a cognitive overload and potentially leads to inefficient management of the writing process (Kellogg, 2018; McCutchen, 2011). In this regard, the writing process in these young writers predominantly focuses on text production, they use a "knowledge-telling" approach (young writers compose their text by focusing on their thoughts, not on how the text itself reads) with a planning process that is limited to the retrieval of ideas and then literal transcription, without considering the needs of the reader, and with minimal or non-existent review (Deane, 2018; Kellogg, 2018). Because of this, students allocate few cognitive resources to planning or revising their texts, and as a result, their texts exhibit low quality and poor structure, and are incoherent or inconsistent in meeting the communicative objective or addressing the intended reader (Beauvais et al., 2011; Kellogg, 2018; Koster et al., 2017).

One effective practice is to teach students strategies for planning, drafting, and revising their texts to help them manage composition and reduce cognitive overload during the writing process (Graham & Alves, 2021; Graham & Harris, 2017; Traga-Philippakos & MacArthur, 2020). Various meta-analyses have indicated strategy-focused instruction as the most effective instructional approach compared to other forms of writing instruction, for example, text structure instruction or teaching transcription skills (e.g., Graham et al., 2012; Koster et al., 2015).

Strategy-focused instruction is not a single technique (MacArthur, 2017), but rather a multicomponent package of instructional content (knowledge of self-regulation procedures, strategies associated with mnemonics, discourse knowledge) in combination with three different instructional components or instructional techniques identified as effective evidence-based practices (Graham & Harris, 2017): (a)

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Direct teaching of knowledge about writing processes (planning, drafting, or revising) and characteristics of a quality text; (b) *Modelling* with thinking aloud protocols followed by the teacher who provides examples about how to use specific writing strategies and writing processes; (c) *Peer or individual practice* for students, practicing these processes or strategies while the instructor guides and encourages them (e.g., De Smedt et al., 2020; Fidalgo et al., 2017).

In recent years, several effective strategy-focused instruction programs have emerged, with the most important being the Self-Regulated Strategy Developed Model (SRSD; Harris & Graham, 2017). Multiple studies support the effectiveness of SRSD in different educational stages for instruction in different types of text genres (e.g., Brunstein & Glaser, 2011; Harris & McKeown, 2022; Rosário et al., 2019; Saddler et al., 2019). A similar program was developed by Fidalgo and Torrance (2017) called CSRI (Cognitive Self-Regulation Instruction). The CSRI is a strategy-focused instruction based on Zimmerman's model of self-regulation (e.g., Zimmerman, 2000). The CSRI includes various instructional components for teaching primary school students to write compare-contrast texts. The CSRI has so far been shown to be effective in improving the writing product (in terms of quality, structure, and text coherence) of 4th and 6th grade primary school students in regular classroom contexts in the short-term (pre/post-test) and the long-term (Fidalgo et al., 2017; Rodríguez et al., 2021a; Rodríguez et al., 2021b).

Because strategy-focused instruction combines different techniques and instructional content—its multicomponent nature (Fidalgo et al., 2017; MacArthur, 2017)—it therefore presents the problem of determining which instructional techniques or combinations of techniques are essential in learning to write (De La Paz 2007; Fidalgo et al., 2017; Rodríguez et al., 2021a; Rodríguez et al., 2021b). Few studies have focused on testing the different techniques, instructional components, or combinations thereof (e.g., De Smedt & Van Keer, 2018; Harris, et al., 2006; López et al., 2017; Sawyer et al., 1992), although those that have were effective. From those studies we can conclude that for upper-primary students, both modelling and direct teaching techniques are equally effective in teaching students how to write (López et al., 2017), and the combination of direct teaching and peer-assisted techniques would be the most effective instructional combination compared to other instructional approaches (i.e., matched practice without instruction or writing individually) (De Smedt & Van Keer, 2018).

Along similar lines, other studies have focused on examining whether students need to be taught explicit strategic knowledge about planning or revision processes when discourse knowledge is taught thoroughly (Fidalgo et al., 2015; Rodríguez et al., 2021a; Rodríguez et al., 2021b). Fidalgo et al. (2015) showed that for typically developing 6th grade students, teaching explicit planning and revision processes was not necessary, in fact it resulted in them taking longer to produce their texts, with no gain in the quality of the finished product. In contrast, Rodríguez et al. (2021a, 2021b) demonstrated that for young writers (typically developing 4th grade students) teaching process strategies, particularly pre-planning, was necessary to achieve quality texts over short and long-term periods.

One limitation of the studies cited above is that the instructional writing programs in the experimental conditions each only focused on a single text genre: compare-contrast (Rodríguez et al., 2021a; Rodríguez et al., 2021b), descriptive (De Smedt & Van Keer, 2018), argumentative (López et al., 2017), or narrative texts (Sawyer et al., 1992). These studies did not consider the benefits or transfer of the intervention effects to other text genres. Do students need to be taught different text genres to benefit in each one? Or does an intervention in one text genre provide benefits that transfer to other genres? In this regard, Bouwer et al. (2015) highlighted that generalizable inferences are not appropriate because the ability to write differs from genre to genre. Those authors suggested that in order to draw conclusions about writing in a more valid and reliable way, multiple texts in different text genres should be administered, with different panels of raters (Bouwer et al., 2018).

In this context, few studies have focused on examining whether strategy-focused instruction is effective for students transferring writing skills to other text genres (De Smedt et al., 2020; Fidalgo et al., 2015; Harris et al., 2006; Tracy et al., 2009). Harris et al. (2006) and Tracy et al. (2009) examined the effectiveness of SRSD in struggling 2nd grade students (Harris et al., 2006) and in regular 3rd grade students (Tracy et al., 2009). The findings of both studies showed that students who received the intervention in SRSD wrote qualitatively better than the control group in text genres they were taught (stories and persuasive writing) as well as genres they were not (personal narratives and informative writing). However, as Tracy et al. (2009) argued, the results need to be treated with caution given that the impact of the strategies was transferred to a genre that, while not taught (personal narrative), was similar to the genre that was the focus of the instruction (stories). In contrast to these studies in which transfer was stimulated, Fidalgo et al. (2015) and De Smedt et al. (2020) investigated spontaneous transfer of writing skills, in other words, without discussing how the general writing strategies could be applied in a genre that had not been taught. Moreover, in both studies the taught genre was a different type to the untaught genre. In the case of Fidalgo et al. (2015) the results indicated that students who received the CSRI program improved the coherence, structure and overall quality in both compare-contrast essays (instructed genre) and opinion texts (uninstructed genre). However, the study by De Smedt et al. (2020), with 431 students in 5th and 6th sixth grade, found no transfer effect from peer-assisted writing in an explicit writing instruction program for descriptive texts (instructed genre) to narrative texts (uninstructed genre).

The Current Study

Considering the previous research, the present study has two objectives: (1) to explore whether strategy-focused instruction (CSRI program) leads to spontaneous transfer improving the writing product (greater quality, structure, and text coherence) of an uninstructed genre (opinion text) in the short and long-term; and (2) to examine whether there is an effect of the order of instructional components; whether one is more effective than the other in producing spontaneous transfer.

In pursuit of these two aims, the effect of the instruction was assessed by changes in the writing product in the short and long term over five time points: immediately prior to intervention (pre-test), following each component (test 1 and test 2), at the end of the intervention (post-test), and 8 months after finishing the intervention (follow-up).

The present study used the same assessment design, sample and instructional program (CSRI program) described in a previous study (Rodríguez et al., 2021a; Rodríguez et al., 2021b) which compared two experimental conditions—differing in the sequence of the instructional components—and a control condition. That previous study demonstrated that both sequences of the CSRI program were effective in the short- and long-term in the improvement of 4th grade students' writing product in a compare-contrast text. However, as previous studies have highlighted, it is necessary to consider not only the benefits in the instructed genre, but also the benefits in uninstructed genres (e.g., De Smedt et al., 2020; Fidalgo et al., 2015; Harris et al., 2006; Tracy et al., 2009). In this regard, following the procedure by Fidalgo et al. (2015) with 6th grade students, in the present study we considered spontaneous transfer, and therefore the benefits on 4th grade students' writing product in an opinion text (uninstructed) resulting from implementing the CSRI program in a compare-contrast text (instructed).

The two types of expository texts (compare-contrast text and opinion text) do not share similarities in terms of the particular characteristics that each genre involves. This means it is possible to see whether there is spontaneous transfer of the CSRI program to a text genre that is not the focus of the focused of the instruction (opinion text). Furthermore, we add to the work of Fidalgo et al. (2015) by examining not only short-term transfer but also long-term effects.

Based on previous empirical research on the benefits of strategy-focused instruction to promote transfer of learning strategies (e.g., Fidalgo et al., 2015; Harris et al., 2006), we formulated the following hypotheses in relation to our two aims:

Hypothesis 1. Implementing the CSRI program will provide benefits in the short term (pre/post-test) and in the long term (8 months after the end of training) in the writing product of an opinion text (uninstructed). These benefits will be reflected on better structure, coherence and quality in the texts of students in the experimental conditions (who received the CSR program for a compare-contrast text) than the control condition (who did not receive instruction with the CSRI program).

Hypotheses 2. The sequence of the implementation of the CSRI program (direct teaching, practice and modelling for experimental condition 1; modelling, practice and direct teaching for experimental condition 2) will not produce different effects for the transfer of benefits of the writing product to an opinion text in the short or long term.

The present study included maintenance measures because the aim of teaching strategies to learners is to foster effective autonomous learning not only during the intervention, but also in the long term.

Method

Participants

The sample comprised a total of six classes in 4th grade primary education (N = 126) from three different charter schools (state and privately funded) in the north of Spain. Students' ages ranged from 9 to 10 years old (M = 9.39; SD = 0.14), selected by accessibility. The initial sample comprised 153 students (with 50% girls and 50% boys). Although the 153 students received the same instruction as their peers, students with learning disabilities and special education needs (n = 16) and students who did not attend all the evaluation time points (n = 11) were not considered in the statistical analysis which produced a final sample of 126 students. All students followed the ordinary Spanish school education curriculum.

The six classes were randomly assigned to one of the two experimental conditions or to a control condition, meaning there were two classes in each condition. Experimental condition 1 comprised 47 students (26 boys and 21 girls) with a mean age of 9.36 (SD = .48). Experimental condition 2 comprised 36 students (16 boys and 20 girls; M_{age} = 9.56; SD = .58). The control condition comprised 43 students (21 boys and 22 girls; M_{age} = 9.27; SD = .46).

Training: CSRI program

The CSRI program was designed to teach students strategies to facilitate the process of planning and drafting quality compare-contrast texts. The program comprised three instructional components (direct instruction, modelling, and peer practice) with two sessions for each component, giving a total of six sessions (following a schedule of one one-hour session per week). The three components varied in terms of how the content was delivered.

The first experimental condition began with the direct teaching component. In the first session, students were introduced to the strategy planning process. The instructor started the session by teaching the students a metacognitive matrix identifying the nature, purpose, and central features of effective planning processes. Then students were intro-

duced to the mnemonic POD + the vowels OAIUE, reminding the students of all the steps they need to follow to plan a compare-contrast text: (1) *Think of ideas [Pensar]* before writing; (2) *Organize* your thoughts with the vowels OAIUE. The mnemonic rule [O *(Objective)*; A *(Audience)*; I *(Ideas)*; U *(Union)*; E *([Esquema] Plan)*: they have to make a plan including ideas about the introduction, development and conclusion; and finally (3) *Develop[produce]* the text. In the second session of this component, students were given a metacognitive matrix identifying the nature, purpose and central features of effective drafting processes. To do this, the instructor taught the mnemonic IDC + the vowels OAIUE. The mnemonic rule IDC encourages the organization and structure of a comparison-contrast text: (1) *Introduction*; (2) *Development*; (3) *Conclusion*. In a similar way to the first session, the vowels provide criteria about the content during all three of the IDC production phases. Both strategies (POD/IDC + the vowels OAIUE) were supported by illustrated summaries to facilitate students' learning.

In the peer practice component, students worked in pairs planning (session 3) and drafting (session 4) a compare-contrast text. Students with similar writing abilities were paired by the instructor who assigned them to writer or helper roles. In the second session of this component (session 4), the writer took the outline created in the previous session and translated it into text. This session then followed an identical pattern to session 3, with a focus on the IDC mnemonic. In both sessions, the instructor also patrolled the class, listening to the think aloud and providing feedback and help for the writer about how to perform the thinking aloud and apply the strategies taught.

Finally, in the modelling component the teacher demonstrated the correct writing process steps for the planning strategy (session 5) and drafting strategy (session 6) that had been explained previously in the direct teaching component. Modelling involved think aloud (which was mainly scripted) while composing a compare-contrast text in front of the class. The teacher emphasized explicit references to the strategy with a self-regulatory approach to the task and with self-statements about positive expectations producing a written plan (session 5) and draft text (session 6). After modelling, students made notes about the model's most important thoughts. Then, the instructor facilitated a whole-class discussion, drawing together the students' observations. At the end, each student individually wrote down their reflections about the differences between their own writing practice and the processes that they had seen.

The second experimental condition began with the modelling component, followed by peer practice, followed by direct teaching. The two sessions of the modelling component followed the same pattern as the modelling component in experimental condition 1. However, in this condition, the explicit reference to the strategy and the associated mnemonics were removed. In the peer-practice component sessions, students were able to watch the teacher modelling without explicit mention of the strategy or mnemonic. Then, students had to emulate the writing processes that they had seen modeled (similar to experimental condition 1), students worked in writer-observer pairs with think aloud planning (session 3) and drafting (session 4) their compare-contrast texts. During emulation, the teacher provided feedback and prompts to stimulate students to think aloud if they forgot to do so and remind them of the correct form. Finally, similar to experimental condition 1, in the direct teaching instructional component, the students were introduced to the concepts underlying the POD + OAIUE mnemonic rules (session 5) and the IDC + OAIUE mnemonic rules (session 6).

The control condition was production-focused without any strategy instruction. The characteristics of the narrative, descriptive and compare-contrast text were taught in sessions 1 to 3 and those of compare-contrast in sessions 4-6. Students wrote a compare-contrast text in pairs (session 4 to 5) and read it aloud so that the instructor and the class group could provide feedback. Finally, in session 6, students were put into groups to complete the missing parts of a compare-contrast text. After the task was completed, the instructor led a group discussion about whether the text was completed properly.

The structure of intervention design is outlined in Table 1.

Table 1

Research Design Showing Instructional Sequences and Writing Assessment Probe for Each Condition

Condition		Week 1-2		Week 3-4		Week 5-6		8 months later	
EC 1	PRE	Direct Teaching	Test1	Peer-Practice	Test2	Modelling	POST	Follow-Up
EC 2	PRE	Modelling	Test1	Peer-Practice	Test2	Direct Teaching	POST	Follow-Up
CC	PRE	Control	Test1	Control	Test2	Control	POST	Follow-Up

Note. EC1 = Experimental Condition 1; EC2 = Experimental Condition 2; CC = Control Condition; PRE = Pretest; POST = Posttest.

Instruments

Writing Assessment Task. In the writing assessment task, students had to write an opinion text about various topics that were selected beforehand based on students' interests: pretest (homework), test 1 (having a pet), test 2 (doing sport), post-test (zoo animals), follow-up (recycling).

*Evaluation Session.*The evaluation session lasted one hour in which a specialist researcher gave the students small cards which included the title of the topic with a picture about it. Then students were asked to write an opinion text in response to the question "for or against"? The researcher gave students two worksheets, one for planning and one for the final text. Students were told that using the first worksheet was optional. The specialist researcher reminded the students that they had one hour to write their text and encour-

aged them to produce the best opinion essay that they could. The specialist researcher did not provide any help during the evaluation writing task.

Product Assessment. Texts were analyzed using the anchor text procedure from Rietdijk et al. (2017). In this procedure, texts were rated in separate rounds for each dimension or measure (structure, quality, coherence) for which specific criteria and definitions were provided to the evaluators (independent researchers of writing instruction and assessment). This procedure was repeated at each evaluation timepoint (pretest, test 1, test 2, post-test and follow-up).

Procedure

Training Delivery

The study was conducted during the spring school term and the sessions took place in literacy lessons. The full implementation of the program was carried out by 6 teachers (educational professionals with master's degrees in primary education), one for each class.

Teacher Training

Prior to the start of the intervention, a specialist researcher who guided the study methodology presented the CSRI program to the teachers, covering general information, background, and implementation schedule. Then, in order to facilitate the implementation of the CSRI program, all the teachers were given the complete set of materials for each student (individual portfolios) and a "teacher session manual" containing detailed descriptions of the 6 sessions. There were three training sessions in total (one training session for each instructional component). Each training session was delivered a week before the corresponding session was implemented. Teachers were trained individually by the specialist researcher and all sessions lasted for approximately 60-80 minutes following the same two-part pattern.

Treatment Fidelity

All teachers were given manuals including the elements and activities for each session. Furthermore, a specialist researcher met with the teachers weekly to train them in applying the instructional procedures and to interview them about their experiences of the intervention sessions. Third, the student portfolios with the set of materials were reviewed following the sessions. Evidence from teacher interviews and students' portfolios suggested that the intervention was delivered correctly. To ensure a procedure that respects ethical standards, we sent a letter to the families in which they were informed of the objectives and nature of the study. We requested written informed consent from the families for their children's participation in the study. After the intervention, the strategy-focused instruction CSRI was delivered to each of the teachers in the control group. This procedure ensured that all participants had the opportunity to benefit from the strategic intervention. The study was conducted in accordance with The Code of Ethics from the World Medical Association (Declaration of Helsinki), which reflects the ethical principles for research involving humans (World Medical Association, 2013) and was approved by the Ethical Committee of the Principality of Asturias (reference: APPrendeRTi/70/19-Oviedo)

Design and Data Analysis

A quasi-experimental design with three research conditions was applied. The classes were randomly assigned to one of the two experimental conditions or to a control condition.

The data was analyzed using SPSS 27.0 (IBM, Chicago, IL). The normal distribution of the three measures analyzed allowed us to perform a parametric analysis. First, in preliminary analysis, we examined the normal distribution and differences based on sex and teacher-class, which were taken as covariates, as previous studies have indicated the relevance of these variables and the need for them to be controlled (Murnane & Willett 2011; Rodríguez et al., 2021a).

Based on the aims of the study, to determine the benefits of the CSRI program in each measure, three one-way Analyses of Covariance (ANCOVA) were performed for structure, coherence, and quality at each evaluation timepoint. The independent variable was the condition (control condition, experimental condition 1 and experimental condition 2) and the dependent variables were the students' performance in each measure (structure, coherence, and quality).

In order to assess the learning gain from the CSRI program more deeply, we analyzed the interaction between the conditions by timepoint. Specifically, we used repeated measures analysis of covariance for each measure at the timepoints pretest vs. posttest, pretest vs. test 1, test 1 vs. test 2, test 2 vs. posttest, and posttest vs. follow-up. The independent variables were the evaluation timepoint and the condition, while the dependent variables were student performance in each measure (structure, coherence, and quality).

We used Bonferroni's multiple comparison to determine which groups had significant differences between them (*post hoc* Bonferroni comparison, $p < .05/3 = .016$). Effect sizes were assessed using partial eta squared: $\eta_p^2 < .01$ = small effect, $\eta_p^2 \geq .059$ moderate effect; and $\eta_p^2 \geq .138$ = large effect (Cohen, 1988).

Results

Preliminary Compare-Contrast Text Results

The values for asymmetry and kurtosis (see Table 2) for the variables were within the intervals that indicate a normal distribution (Kline, 2011).

Table 2
Means, Standard Deviations Skewness and Kurtosis for Interest Variables

Variables	*M*	*SD*	Skewness	Kurtosis	Minimum	Maximum
Structure						
Pretest	85.11	9.99	0.59	–0.53	70	110
Test 1	89.68	12.85	0.71	–0.14	70	123
Test 2	102.66	16.18	–0.47	–1.05	70	125
Posttest	103.15	17.03	–0.51	–1.05	70	130
Follow up	94.26	12.92	0.23	–0.72	70	125
Coherence						
Pretest	85.25	10.44	0.40	–0.78	70	110
Test 1	90.16	10.59	0.16	–0.62	70	115
Test 2	99.89	14.33	–0.32	–1.04	70	120
Posttest	101.24	15.20	–0.43	–1.10	70	127
Follow up	91.03	8.56	0.04	–0.57	71	110
Quality						
Pretest	85.48	10.64	0.28	–0.96	70	110
Test 1	87.75	11.35	0.28	–0.60	70	118
Test 2	97.81	14.49	–0.16	–1.13	70	123
Posttest	100.65	16.76	–0.32	–1.08	71	130
Follow up	90.54	10.00	0.09	–0.52	70	113

Note. *M* = Mean; *SD* = Standard Deviation

Table 3 summarizes the means and standard deviations for each variable by condition and evaluation time.

Differences in pretest were analyzed with regard to three independent variables: sex, condition, and teacher-class (given that the teachers varied across conditions). We carried out different Univariate Analysis of Variance (ANOVAs) taking the measure (structure, coherence, or quality) as a dependent variable and the condition, sex, or teacher-class as independent variables. The results indicated that the differences were not significant for the condition groups in relation to structure (p = .508), coherence (p = .330) or quality (p = .723). However, we found differences related to sex in structure, $F(1, 124) = 16.073$, $p \leq .001$, $\eta_p^2 = .115$ and quality, $F(1, 124) = 6.446$, $p = .012$, $\eta_p^2 = .049$. Moreover, we found differences related to teacher-class in structure, $F(5, 120) = 5.159$, $p \leq .001$, $\eta_p^2 = .177$; coherence $F(5, 120) = 6.293$, $p \leq .001$, $\eta_p^2 = .208$; and quality, $F(5, 120) = 7.241$, $p \leq .001$, $\eta_p^2 = .232$. In consequence, we controlled sex and teacher-class variables as covariates.

Table 3
Means, Standard Deviations and One-way Analyses of Covariance for structure, Coherence, and Quality Variables by Treatment Condition.

Variables	EC1	EC2	CC	$F(2, 121)$	η_p^2
	M(SD)	*M(SD)*	*M(SD)*		
Structure					
Pretest	84.04(10.44)	84.88(10.68)	86.48(8.92)	0.70	0.01
Test 1	89.00(12.63)	92.83(13.07)	87.79(12.71)	1.52	0.02
Test 2	103.70(14.34)	108.88(15.00)	96.32(17.06)	4.98*	0.07
Posttest	107.97(15.08)	107.05(15.19)	94.60(17.54)	10.21***	0.14
Follow up	94.63(10.94)	97.36(13.61)	91.25(13.91)	4.04*	0.06
Coherence					
Pretest	83.46(9.34)	86.05(10.78)	86.53(11.24)	0.83	0.01
Test 1	91.89(9.96)	91.00(11.00)	87.58(10.65)	4.03*	0.06
Test 2	100.12(12.82)	105.00(13.21)	95.37(15.59)	3.17	0.05
Posttest	104.85(13.45)	104.52(14.42)	94.55(15.71)	7.88***	0.11
Follow up	92.12(7.80)	92.75(8.20)	88.41(9.18)	4.18*	0.06
Quality					
Pretest	84.55(10.27)	86.41(11.11)	85.72(10.81)	0.87	0.01
Test 1	88.25(10.93)	88.86(15.50)	86.27(11.79)	2.95	0.04
Test 2	98.36(13.36)	102.63(13.32)	93.18(15.48)	3.09	0.04
Posttest	103.36(15.79)	104.27(15.85)	94.65(17.25)	4.47*	0.06
Follow up	91.87(8.75)	92.72(10.38)	87.27(10.34)	4.15*	0.06

Note. EC1 = Experimental Condition 1; EC2 = Experimental Condition 2; CC = Control Condition; *M* = Mean; *SD* = Standard Deviation; η_p^2 (eta-squared statistic) = estimates of effect size.
*$p < .05$; **$p < .01$; ***$p < .001$

Condition Effects on the Uninstructed Test

Table 3 shows the differences between the three conditions, for each timepoint, in each variable (structure, coherence, and quality of the uninstructed test -opinion text-). With respect to the three variables, the ANCOVA showed that the differences between the three experimental conditions were statistically significant at two timepoints, posttest (after the full CSRI program) and follow-up (8 months after), with small effect sizes (which were larger at posttest than at follow-up for structure and coherence variables). At posttest, *post hoc* analysis showed statistically significant differences between each of the experimental conditions and the control condition for the structure variable (experimental condition 1 vs. control condition $p < .001$; experimental condition 2 vs. control condition $p = .002$); and for the coherence variable (experimental condition 1 vs. control condition $p = .003$; experimental condition 2 vs. control condition $p = .009$). However, for the quality variable, the *post hoc* analyses were not significant comparing either experimental condition to the control condition (experimental condition 1 vs. control condition $p = .03$; experimental condition 2 vs. control condition $p = .03$). At the follow-up timepoint, *post hoc* analysis did not show statistically significant differences between either of the experimental conditions and the control condition for any of the variables. The effect of the covariate (teacher-class) was statistically significant in all comparisons examined, with the exception of at pretest for the variable structure ($p = .51$) and posttest for the variable quality ($p = .94$). Moreover, the effect of the covariate sex was statistically significant in many of the comparisons examined, with the exception of at pretest ($p = .31$), test 1 ($p = .37$), posttest ($p = .08$) and follow up ($p = .30$), for the variable coherence; at test 2 ($p = .14$) and posttest ($p = .12$), for the structure variable; at test 2 ($p = .14$), posttest ($p = .11$) and follow up ($p = .22$) for the quality variable.

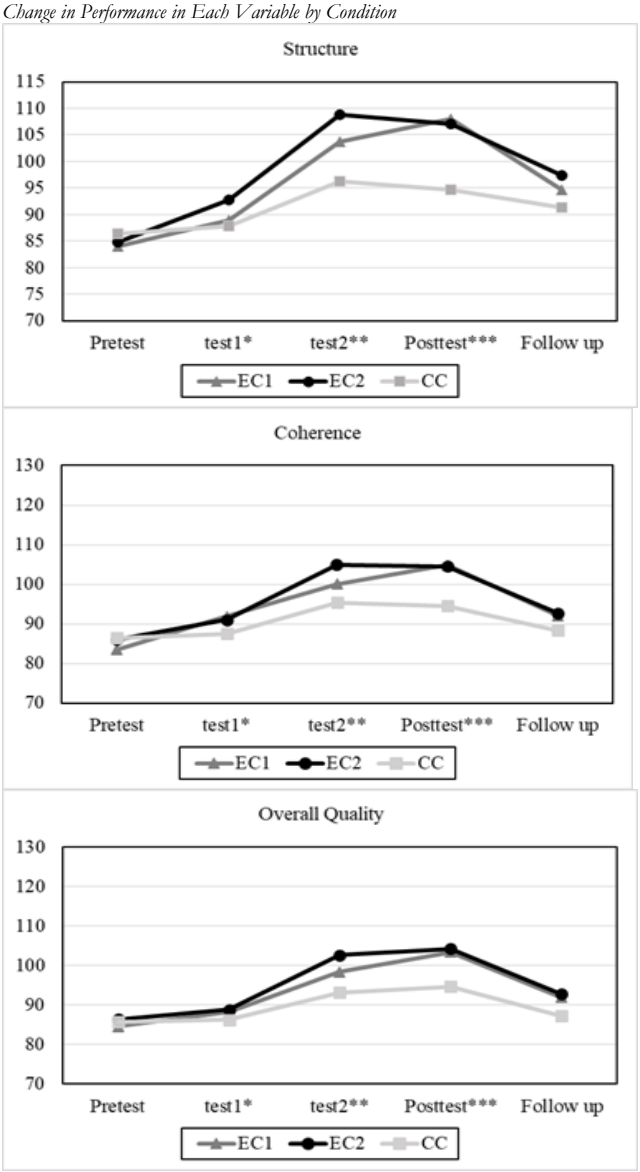
Finally, Figure 1 shows the change in performance over time in structure, coherence, and quality by condition.

Condition Effects on the Uninstructed Test by Time Point

Repeated measures ANCOVA for the three variables structure, coherence, and quality (Table 4), demonstrated that the interaction (evaluation time x condition) was significant for the comparisons between the timepoints pretest vs. posttest and posttest vs. follow-up (with small effect sizes). Moreover, the effect of the covariate (sex) was not statistically significant in all comparisons. The effect of teacher-class as covariate was statistically significant in three of the comparisons as Table 4 shows (pretest vs. test 1 for structure; pretest vs. posttest; test 2 vs. posttest for quality).

Figure 1

Change in Performance in Each Variable by Condition



Note. * After 2 sessions. **After 4 sessions. ***After 6 sessions (full program).

EC1 = Experimental Condition 1; EC2 = Experimental Condition 2; CC = Control Condition.

Table 4
Results of Repeated Measures ANCOVA for the Three Variables

	Interaction (evaluation time x condition)			Covariate Teacher-Class
	$F(2, 121)$	η_p^2	Post hoc	$F(1, 121)$
Structure				
Pretest vs. Posttest	13.65***	0.18	EC1 > CC: $p = .05$; EC2 > CC: $p = .08$	3.28
Pretest vs. Test 1	2.37	0.03	EC1 > CC: $p = .08$; EC2 > CC: $p = .04$	15.78***
Test 1 vs. Test 2	3.09	0.04	EC1 > CC: $p = .28$; EC2 > CC: $p = .005$	0.29
Test 2 vs. Posttest	1.88	0.03	EC1 > CC: $p = .002$; EC2 > CC: $p < .001$	0.66
Posttest vs. Follow-up	4.36*	0.06	EC1 > CC: $p = .004$; EC2 > CC: $p = .003$	3.10
Coherence				
Pretest vs. Posttest	9.41***	0.13	EC1 > CC: $p = .27$; EC2 > CC: $p = .11$	0.46
Pretest vs. Test 1	4.94**	0.07	EC1 > CC: $p = .97$; EC2 > CC: $p = .98$	0.26
Test 1 vs. Test 2	1.26	0.02	EC1 > CC: $p = .11$; EC2 > CC: $p = .01$	0.31
Test 2 vs. Posttest	2.63	0.04	EC1 > CC: $p = .02$; EC2 > CC: $p = .004$	0.08
Posttest vs. Follow-up	3.01	0.04	EC1 > CC: $p = .003$; EC2 > CC: $p = .004$	0.20
Quality				
Pretest vs. Posttest	5.83**	0.08	EC1 > CC: $p = .33$; EC2 > CC: $p = .12$	4.59*
Pretest vs. Test 1	1.30	0.02	EC1 > CC: $p = .97$; EC2 > CC: $p = .98$	1.04
Test 1 vs. Test 2	2.83	0.04	EC1 > CC: $p = .36$; EC2 > CC: $p = .04$	0.577
Test 2 vs. Posttest	0.72	0.01	EC1 > CC: $p = .05$; EC2 > CC: $p = .008$	7.26**
Posttest vs. Follow-up	1.73	0.02	EC1 > CC: $p = .01$; EC2 > CC: $p = .009$	3.65

Note. η_p^2 (eta-squared statistic) = estimates of effect size. From *post hoc* comparison of all students in each group the Bonferroni correction was applied ($p < .05/3 = .016$). EC1 = Experimental Condition 1; EC2 = Experimental Condition 2; CC = Control Condition
*$p < .05$; **$p < .01$; ***$p < .001$

Discussion

The first aim of this study explored a central question of strategy-focused instruction, whether strategy-focused instruction (CSRI program) leads to spontaneous transfer improving the writing product (quality, structure, and text coherence) of an uninstructed genre (opinion text). In our study, students in both experimental conditions were given strategic knowledge about planning procedures such as advance planning. Planning in advance, as the literature indicated, functioned as an external memory, helping students to simplify the process of thinking about content during the composition and reducing the cognitive overload (Kellogg, 2018). This could explain why, as hypothesized, after six sessions of training, the students who had either sequence of the CSRI program exhibited improvements in an uninstructed genre (opinion text) compared to the control group—reflecting a transfer effect at the end of the intervention (posttest). In both experimental conditions the students wrote more structured and more coherent opinion texts than the control group at the posttest. However, and contrary to our expectations, although the means of students in the experimental conditions in the quality measure were higher, neither of these experimental conditions differed significantly from the control group. One reason for this lack of difference may be a combination of the nature of the quality variable itself and the type of genre. Text quality is the overall merit of the text and therefore includes, but is not limited to, structure and coherence. Quality text also involves taking into account the complexity and richness of ideas, interesting detail and correct usage of mechanics (Spencer & Fitzgerald, 1993). Although we taught a strategic approach (the POD and IDC+ vowels mnemonic) to help students who received the CSRI program to achieve adequate production goals, without knowledge of the genre, achieving quality writing can be a challenge for young writers. Moreover, writing an opinion text can also be especially difficult for young writers (Carter et al., 2011; Ferretti et al., 2000). It is also possible that students' writing product was affected by their domain of topic knowledge (Murphy & Alexander, 2002). If students think that they already know about the topic of a text, they may not see the usefulness of using the strategies.

In relation to the long-term effects, and contrary to our predictions, our results showed that 8 months after finishing the intervention, both experimental conditions exhibited a fall in all variables, reflected in the means for structure, coherence, and quality. Moreover, at follow-up, no statistically significant differences were found between the experimental conditions and the control condition. Although, in line with Fidalgo et al. (2015), we did observe a transfer effect at posttest, we cannot say that this effect was maintained over time. It is important to note that in the previous study analyzing the the effects of the CSRI on an instructed text we saw both short- and long-term benefits (Rodríguez et al., 2021a; Rodríguez et al., 2021b). In sum, the CSRI program might benefit from booster sessions or from increasing the length of the initial treatment to ensure a maintenance of the transfer effects.

If we consider our results, and those from Harris et al. (2006) and Tracy et al. (2009), it is possible to conclude that, as De Smedt et al. (2020) argued, for elementary-school students to be able to adequately transfer strategies to uninstructed text genres, they need teachers to teach them how to do it effectively.

The second aim of our study examined whether there was an effect of the order of instructional components of

the implementation (direct teaching, modelling, or peer practice), whether one was more effective than the other in producing spontaneous transfer. In line with the stated hypotheses and the previous study (Rodríguez et al., 2021a; Rodríguez et al., 2021b), the sequence of the components did not result in a greater effect for the CSRI intervention. However, our results differ from the previous study by Rodríguez et al. (2021a, 2021b) in which the peer-practice component was associated with the largest gains in 4th grade students' writing product. In the present study, however, it was not until the end of the instruction that students showed significant learning gains in their compositions.

Nevertheless, although the differences in the present sample were not significant, it is worth emphasizing that, similar to Rodríguez et al. (2021a, 2021b), the pattern of the means indicates that the addition of the peer-practice component provided the greatest learning gains (see Figure 1). The two experimental conditions produced texts with more structure, coherence, and quality than the control group. This result suggests that CSRI program could benefit from the addition of teaching how to adapt the writing strategies to uninstructed text genres to the teaching components in order to give students the opportunity to learn and practice how these strategies could be applied in other contexts.

Among the educational and psychological implications, it is reasonable to argue that in order to successfully transfer writing knowledge and strategies to uninstructed genres, writing needs to be taught and shown effectively to students for them to learn. In other words, teachers need to promote a supportive writing environment in which students practice, test and apply the knowledge they learn. In this sense, the CSRI program provides a full toolkit for promoting suitable writing skills in young writers.

Several limitations should be noted when considering our results. First, this study needs to be replicated using a larger more homogeneous sample (other socioeconomic levels or students with learning difficulties). Second, the significant effects of the (teacher-class) covariate reflects the importance of the role of the teacher in classroom and the importance of education professionals' training in implementing programs like CSRI. Furthermore, the significant value of the teacher-class variable as a covariate indicates how important it is to control for this variable to ensure that changes in students' performance are due to the CSRI program rather than teachers' practices. Future studies might consider running multilevel analyses that consider the teacher-class level.

Other limitations are related to: (1) the lack of a specific assessment of writing strategies, metacognition strategies, and self-regulated learning. This limitation could be overcome through evaluating these variables using specific questionnaires (Bruning et al., 2013; Kieft et al., 2008; Núñez et al., 2013); and (2) Social Validity (Koster et al., 2017), which could be addressed through interviews or questionnaires (e.g., Kiuhara et al., 2012).

Finally, it may be fruitful to study changes in the writing process using online measures (Seoane et al., 2021) which would allow the think aloud to be recorded (López et al., 2019), as well as analyzing the feedback between students during peer practice. Considering the limitations and the lines for future research, our findings indicate that education professionals should not take anything for granted, and we cannot assume that students will transfer what they are taught in one text genre (such as the compare-contrast text) to a different one (such as the opinion text). In order to achieve long-term learning and better writing product, our students would require explicit instruction in transferring their learning to text types other than those we train them in.

Complementary information

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