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Cite this article

Article abstract

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Abstract

Second language (L2) research suggests that synchronous written corrective feedback (SWCF) in online collaborative writing tasks can help improve L2 linguistic knowledge and writing skills. Following the rise of online collaborative writing in the wake of the COVID-19 pandemic, this exploratory study examines L2 learners' perceptions of receiving SWCF during collaborative writing tasks completed on an online text-editing platform (Google Docs) and mediated by videoconferencing (Zoom). Adult learners ($N = 46$) enrolled in advanced online French as a Second Language courses took part in two collaborative writing tasks, during which their teachers ($N = 3$) provided SWCF. Learners' screen activity was recorded. After the experiment, a perception survey was distributed and selected participants took part in semi-structured interviews to further discuss their experience. Results indicate that learners viewed the provision of SWCF through computer-mediated communication as an effective way to improve their L2 writing compared to traditional, delayed written feedback. Pedagogical implications for the implementation of videoconferenced collaborative writing tasks involving teacher SWCF are discussed.

Keywords: computer-assisted language learning; computer-mediated communication; synchronous written corrective feedback; videoconferenced collaborative writing

Résumé

La recherche en langues secondes (L2) suggère que la rétroaction corrective écrite synchrone (RCÉS) dans les tâches d'écriture collaborative (ÉC) en ligne peut aider à améliorer les compétences en écriture. Au vu de l'essor de l'ÉC en ligne faisant suite à la pandémie de COVID-19, cette étude exploratoire examine les perceptions des apprenants de L2 quant à la RCÉS reçue lors de tâches d'ÉC

effectuées sur une plateforme d'édition de texte en ligne (*Google Docs*) et médiatisées par vidéoconférence (*Zoom*). Les apprenants adultes avancés de français L2 (*N* = 46) ont participé à deux tâches d'ÉC, au cours desquelles leur enseignant (*N* = 3) fournissait une RCÉS. L'activité d'écran des apprenants a été enregistrée. Après l'expérience, un questionnaire de perceptions a été distribué et les participants sélectionnés ont participé à des entretiens semi-structurés pour discuter de leur expérience. Les résultats indiquent que les apprenants considèrent la RCÉS médiatisée par la technologie comme un moyen efficace d'améliorer leur écriture en L2 par rapport à la rétroaction écrite traditionnelle et différée. Les implications pédagogiques pour la mise en œuvre de tâches d'ÉC par vidéoconférence sont discutées.

Mots-clés : apprentissage des langues assisté par ordinateur ; communication assistée par ordinateur ; rétroaction corrective écrite synchrone ; rédaction collaborative par vidéoconférence

Introduction

Second language (L2) teachers traditionally use delayed corrective feedback to aid learners in understanding and rectifying errors. One limitation of this practice, which is time-consuming for the instructor (Kim, Choi, Kang, et al., 2020), is that learners do not always recall their initial communicative intention when they receive feedback, as it is usually delayed by a few days (Liu & Brown, 2015). Synchronous corrective written feedback (SCWF) offers a feasible alternative through platforms like Google Docs (Zhang & Zou, 2022). Such tools, used for computer-mediated collaborative writing (CW), enable novel teaching practices by providing SCWF to learner groups and tracking its uptake (Bikowski & Vithanage, 2016).

The use of videoconferencing software (e.g., Zoom) for synchronous language learning has surged (Kohnke & Moorhouse, 2020). Recent studies highlight the potential of videoconferenced CW tasks, boosting learner engagement more than chat-based CW (Aubrey, 2022). Furthermore, videoconferenced CW, which triggers oral interaction between learners, prompts quick conversational repairs, aiding dynamic text enhancement (Balaman, 2021). Given limited research on learner views of synchronous computer-mediated communication in L2 classrooms, this study investigates the affordances and challenges of SWCF in videoconferenced CW from the learners' perspective.

Theoretical Framework and Literature Review

Collaborative Writing and Synchronous Written Corrective Feedback

Collaborative writing, defined as "an activity where there is a shared and negotiated decision-making process and a shared responsibility for the production of a single text" (Storch, 2013, p. 3), involves learners in the co-authorship of written texts. From a cognitive (Long, 2017) and sociocultural perspective (Storch, 2017), CW can support language acquisition, as the co-writing of a single text provides learners with opportunities to negotiate both meaning and form (Long, 2017). Collaborative text revision leads to *languaging* – the "process of making meaning and shaping knowledge and

experience through language" (Swain, 2006, p. 98) – and exposes learners to a variety of new words, thus reinforcing grammatical accuracy while improving their discursive competence (Abrams, 2019). In addition to co-constructing linguistic knowledge, language learners can benefit from their peers' writing skills (Swain & Lapkin, 2001).

Second language researchers have explored the potential of Web 2.0 tools for both asynchronous (e.g., wikis, forums, blogs) or synchronous (e.g., Google Docs) computer-mediated CW (Li, 2018). Wu (2015) found that synchronous chat-based computer-mediated CW was less intimidating than face-to-face CW. In one of the rare comparative studies involving voice-based interaction, Oskoz and Elola (2014) found that learners focused more on general text structure during synchronous voice interaction, while they tended to focus on localized grammatical and lexical issues (e.g., word choice) during asynchronous text-based computer-mediated CW. Although videoconferencing has the potential to support L2 learning by facilitating meaning negotiation during computer-mediated CW tasks (Balaman, 2021), its use remains under investigated in L2 research (Storch, 2019).

From a cognitive and sociocultural perspective, the provision of written corrective feedback, which consists of L2 learner text corrections, supports learner linguistic knowledge and accuracy by bringing their attention to linguistic form (Kim, Choi, Kang, et al., 2020; Shintani & Aubrey, 2016). Recently, researchers explored the potential of using online text-editing platforms (e.g., Google Docs) to provide computer-mediated SWCF, with conclusions showing that providing SWCF during synchronous computer-mediated CW helps to improve grammatical accuracy (Shintani & Aubrey, 2016; Yamashita, 2021). Yeh (2014) found that synchronous text-chat collaboration during computer-mediated CW led to better writing products, as participants could receive immediate peer feedback and clarify linguistic elements. However, SWCF during CW tasks remains under-researched (Kim, Choi, Yun, et al., 2020), and according to Cho et al. (2022), "it would be insightful to capture students' perceptions by employing different methods (e.g., interviews, questionnaires, stimulated recall)" (p. 16).

Learners' Perceptions of Computer-Mediated Collaborative Writing

Little is known about student perceptions of synchronous computer-mediated CW, with research focusing primarily on English as a foreign language (EFL), often with limited sample sizes (Nguyen, 2023). Bikowski and Vithangage (2016) compared individual versus collaborative writing (Google Docs) in an intermediate EFL university course. They found that 42 (71%) out of of 59 participants felt that computer-mediated CW helped them improve their writing skills (speed and organization) in a low-anxiety and engaging environment. They enjoyed collaboratively proofreading and revising their texts as "great discussions and teamwork" took place (p. 88). Similarly, Strobl (2014) showed that synchronous CW in Google Docs led to better content selection and text organization than individual online writing among advanced adult learners of German after three weeks. In Ubaldo (2021), the majority of 31 intermediate EFL learners preferred to work in pairs or in groups of four (rather than six), as this was perceived as an efficient way to mutualize linguistic resources and writing skills. Last, Zhang and Zou (2022) found a positive correlation between student perceptions of computer-mediated CW, engagement in group discussion, and the number of collaboratively resolved errors.

Computer-mediated CW also presents some challenges. For instance, Alghasab and Handley (2017) observed non-collaborative writing patterns and unequal participation among intermediate-level adolescent EFL learners in Kuwait. Lack of equal participation can make it difficult to merge opinions and can create frustration among the CW groups (Bikowski & Vithangage, 2016; Ebadi & Rahimi, 2017). In a case study involving two argumentative computer-mediated CW tasks, Cho (2017) found that learners ($N = 3$) may also distrust their peers' advice (according to stimulated recall interviews). Finally, time management (e.g., time allotted to the planning phase) can prove challenging to some groups of learners (Alharbi, 2020).

Despite the increasing use of videoconferencing tools like Zoom, to our knowledge no study has yet investigated learners' perceptions of videoconferenced CW. Only Balaman (2021) explored interactional practices in videoconferenced CW (Google Docs and Skype) in a study that focused on the co-construction of a single sentence by two EFL learners during a single CW task.

Student Perceptions of Synchronous Written Corrective Feedback

Kim, Choi, Kang, et al. (2020) argue that "when examining SWCF, learners' perceptions of such feedback methods cannot be ignored" (p. 182), as SWCF may influence a student's writing processes through different factors (e.g., distraction or anxiety).

Aubrey (2014) was the first to investigate SWCF during synchronous computer-mediated CW. In his study, 44 Japanese adult learners from two intact intermediate EFL classes declared in a post-experimental survey that receiving SWCF during essay writing on Google Docs was motivating and useful. In a case study, Shintani (2016) also accessed two intermediate EFL learners' perceptions of synchronous versus asynchronous computer-mediated written corrective feedback through stimulated recall interviews. While SWCF helped learners avoid repeating the same errors, learners considered it distracting as the feedback occurred at the time of writing. This contrasts with Kim, Choi, Kang, et al.'s (2020) paper-based CW study, where beginner Korean university learners reported that SWCF didn't disrupt their writing flow.

Without using a comparative (synchronous versus asynchronous) approach, Alharbi (2020) investigated upper-intermediate EFL learners' perception of SWCF (Google Docs). Ten Saudi students aged 20 to 23 took part in weekly, 2-hour CW sessions over one semester. The teacher provided SWCF through margin comments. During individual interviews, learners commented that the teacher's SWCF combined with peer collaboration helped them to notice and address both global (text organization) and local (grammar) issues. Four participants expressed their preference for teacher rather than peer feedback, while six declared that teacher and peer feedback were complementary. Reported challenges included the difficulty to locate peer comments, as well as occasional technical issues. Similarly, but in a face-to-face setting, Kim, Choi, Yun, et al. (2020) investigated the perception of 54 beginner learners of Korean about two CW tasks involving indirect SWCF. Comments from a post-experimental survey questionnaire revealed that overall, these CW tasks were perceived as helpful (75% of the responses). However, confusion and potential stress emerged when learners did not understand SWCF and were unsure how to address errors. Confusion decreased during the second task (for which no comments

related to stress were found), suggesting that task repetition might help shape learners' positive perceptions of SWCF during CW tasks.

While learners' perceptions of SWCF have gained attention, recent studies (e.g., Cho et al., 2022; Kim, Choi, Kang, et al., 2020; Kim, Choi, Yun, et al., 2020) have taken place in face-to-face, paper-based CW settings and targeting adult learners of Korean. More research is needed to examine SWCF in other contexts (e.g., L2 learning settings) and formats (e.g., computer-mediated CW).

The Current Study

This literature review identifies several research gaps in the perceptions of SWCF and CW. First, the potential of SWCF during CW tasks should be further explored by "including the consideration of various task designs and implementation factors, as well as diverse instructional contexts" (Kim, Choi, Kang, et al., 2020, p. 197). This study targets a less investigated language (i.e., French) in the specific context of an online course. Second, although the advantages of synchronous computer-mediated CW have been increasingly supported by empirical research, the studies reviewed involved text or audio – but not video – interaction between learners. To our knowledge, no study has yet looked at learners' perceptions of SWCF provided during videoconferenced CW tasks. Understanding such perceptions has become crucial in the wake of the COVID-19 pandemic, as L2 teachers increasingly rely on text-editing software and videoconferencing.

To explore the affordances of limitations of SWCF provided during videoconferenced CW tasks from a learners' perspective, the following research questions were used:

1. What is the perceived learning value of receiving and addressing SWCF provided during videoconferenced CW, according to L2 learners?
2. What is the perceived feasibility of receiving and addressing SWCF provided during videoconferenced CW, according to L2 learners?

Methods

Instructional Context and Participants

Participants included 46 adult learners of French as a second language (FSL) recruited from advanced intermediate and advanced level classes in a Canadian university. The participants volunteered to complete two CW tasks on Google Docs as part of their online FSL course focusing on writing skills. Using intact classes aimed to foster intercultural understanding and L2 communication (Li, 2018). The participant group included 33 females and 13 males, with an average age of 20 years. The participants included 32 individuals: 18 of them had started learning FSL in Grades 6-9 in English-speaking Canadian provinces, while the other 14 were international students. On average, participants had 10.4 years of FSL learning experience. English was the most common first language ($n = 34$), followed by Arabic, Mandarin, and Korean, among others. Participants had similar FSL proficiency levels, according to their institutional placement tests. Their teachers, all native French speakers, had 5, 8, and 19 years'

FSL teaching experience, and each had taught a group of 12 to 22 students for 3 to 5 months at the time of the experiment.

Procedure and Instruments

Participants engaged in two 1-hour CW tasks, spaced three weeks apart, using Google Docs and Zoom (breakout rooms). These platforms were chosen because the participants were familiar with their use in an academic context, which helped to limit the novelty effect. Two opinion exchange tasks were completed as part of the course. Participants collaboratively wrote 400- to 500-word argumentative texts on topics related to COVID-19: Task 1 was about the pros and cons of mandatory vaccination, and Task 2 dealt with the pros and cons of curfews (Appendix).

Classes were divided into groups of 3 and 4 participants, adhering to Dobao's (2012) recommendation for effective participation. When this was not feasible, slight deviations in group size were allowed. Participants were free to choose their groups for Task 1 (15 small groups). Task 2 maintained the same groups, mirroring authentic classroom settings (Bikowski & Vithanage, 2016; Yamashita, 2021). Students began each task by accessing a Google Doc which contained instructions. Students were instructed to work together rather than to divide the writing. Learners interacted verbally in Zoom breakout rooms, either in French (the target language) or English (the lingua franca).

During CW tasks, teachers followed instructions to open each group's Google Docs in separate Internet tabs and provide SWCF. They navigated between 5–7 documents per task, depending on the class size. Synchronous written corrective feedback was provided after groups had written at least two sentences. Due to the study's exploratory nature, teachers had flexibility in the amount and format of the feedback. This included direct or indirect feedback through highlights or comments (e.g., inviting students to reflect on word choice, suggesting checking noun-adjective agreement). Each SWCF provision lasted 30 to 90 seconds before proceeding in a recurring cycle. Teachers did not visit breakout rooms to avoid creating confounding variables in regard to learners' perceptions. Figure 1 illustrates a typical learner's screen during a task.

After completing Task 2, students answered a post-experimental survey to reflect on their learning experience. The survey included a sociodemographic questionnaire and 13 Likert-scale questions. These questions assessed participants' agreement levels (ranging from 1 = *strongly disagree* to 5 = *strongly agree*) with statements related to SWCF and CW. The survey was adapted from Kim Choi, Yun et al.'s (2020) interview questions on SWCF perception during CW and from Bikowski & Vithanage's (2016) online CW perception survey. It was also informed by the technology acceptance model (Venkatesh & Davis, 2000), which posits that perceived usefulness (Statements 2, 4, 6, and 13, α = 0.79) and perceived ease of use (Statements 7 and 8, α = 0.51) influences users' experience with technology. Perceived enjoyment (Statements 1, 3, 10, and 11, α = 0.85), along with Statements 5 (potential distraction during SWCF), 9 (prior CW experience), and 12 (willingness to repeat the experience), offered further insights into perceptions. The lower α for ease of use stemmed from the limited item count (Field, 2018). To bolster validity, two L2 researchers classified items under ease of use, usefulness, and enjoyment categories. The inter-rater reliability for ease-of-use statements reached

100%. The survey also featured an open-ended question for additional comments. Due to naturalistic conditions leading to absenteeism and attrition, the survey garnered 23 responses.

Figure 1

Learner's View During a CW Task (Google Docs) Mediated by Videoconferencing (Zoom)
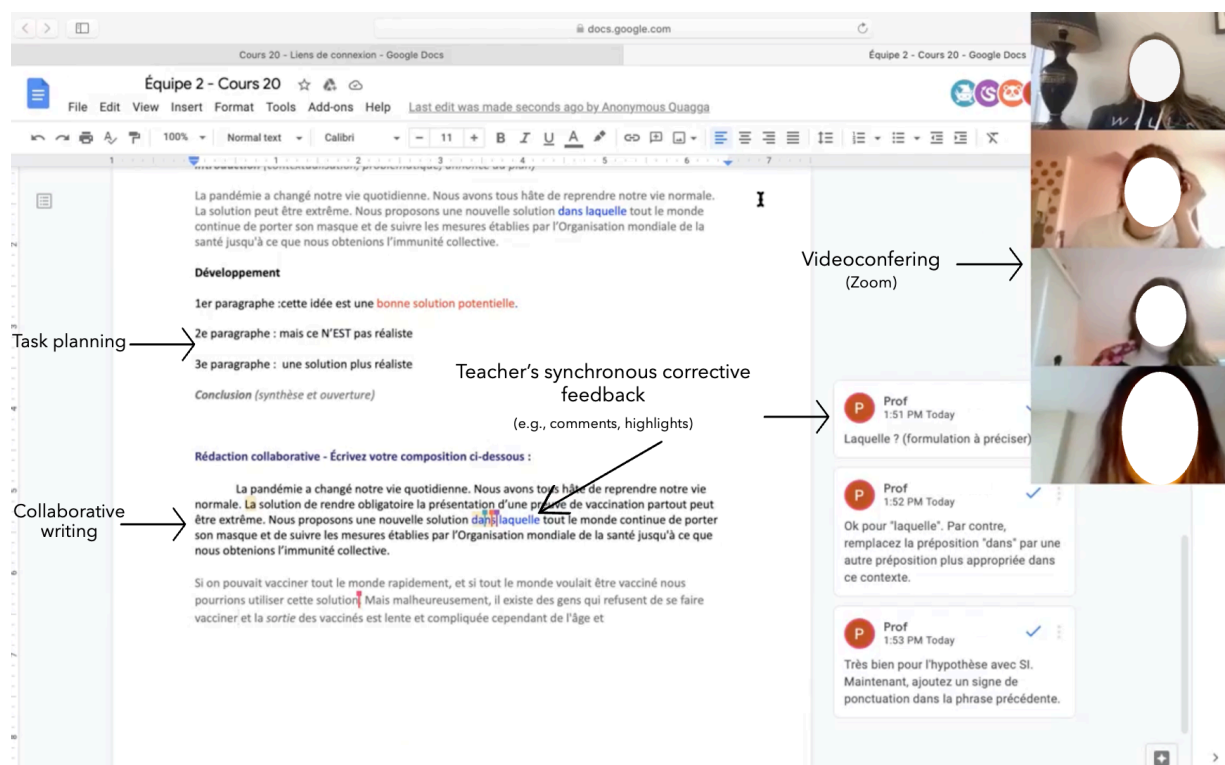
Two weeks after Task 2 completion, 10 participants took part in stimulated recall interviews – a method of introspection that delves into learners' thought processes and strategies (Mackey et al., 2000). This approach aligns with Cho et al.'s (2022) suggestion of employing diverse qualitative methods to understand learners' perceptions of SWCF in a CW setting. Interviewees were selected from the pool of participants who, in their consent forms, had expressed interest in being contacted for an interview. Three to four students were chosen from each of the three intact participating classes to match the distribution of the sample's first language and years of experience learning French (sociodemographic survey data). To ensure similarity to the overall sample, students who had not completed both tasks were excluded from selection. The first language of interviewees was English (*n* = 6), Mandarin (*n* = 1), Turkish (*n* = 1), Korean (*n* = 1), and Arabic (*n* = 1). The mean age was 20.4 years and participants had an average of 9.75 years' experience learning French. Forty-five-minute interviews, involving the researcher and 2 to 4 students, began with open-ended queries about overall experiences (e.g., *How did your collaborative writing experience go?*). Follow-up questions explored perceptions of SWCF's utility (e.g., *To what extent was this experience beneficial for your learning?*), peer interaction during CW (e.g., *What were positive/negative aspects of online peer collaboration for French writing?*), and technical factors (e.g., *How did you feel about the technology in the writing tasks?*). While detailing

interaction patterns and writing processes is beyond the scope of this paper, a screencast software recorded learners' activities during the two CW tasks. This method verified interviewees' claims about actions in Google Docs and adherence to task instructions (e.g., discussing SWCF verbally via videoconferencing instead of chat-based interaction, prioritizing collaboration over cooperation).

Data Analysis

Analysis was initiated by quantitatively examining the post-experimental survey responses. Descriptive statistics were employed to ascertain mean scores for the 13 Likert-scale questions, offering insights into students' perceptions of SWCF during CW tasks. Although the sample size was modest, the study's exploratory nature encouraged us to perform a correlational analysis using SPSS 24.0. This analysis aimed to identify potential relationships among student ratings, akin to Abrams (2019) involving 28 adult German learners and Google Docs.

Subsequently, a content analysis of the transcripts from stimulated recall interviews was conducted through QDA Miner. The use of a semi-open coding approach allowed for the emergence of codes beyond those framed by interview questions (Saldaña, 2013). While some codes were predefined based on research inquiries (e.g., perceived usefulness of videoconferenced SWCF: positive/negative/ neutral), additional codes surfaced during verbatim analysis (e.g., indirect indication of teacher's virtual presence in Google Docs). Two researchers coded 20% of each group interview's data to gauge inter-rater reliability. Cohen's Kappa reliability index stood at 83%. In cases of disagreement, deliberation ensued between the two researchers, with a third party available for consultation.

<p align="center">Results</p>

Post-Experimental Survey

The post-experimental survey asked participants to rate their degree of agreement with different statements about their experience on 1-to-5 Likert scales. No extreme outliers were detected, as assessed by boxplot (i.e., a graphical representation that displays the distribution of a dataset). Since only three participants were outliers, and only for one or two questions each, we did not remove them from the dataset. Not all items were normally distributed, as assessed by Shapiro-Wilk's test ($p < .05$). Table 1 shows the mean (*M*), standard deviation (*SD*), and standard error for each statement.

Table 1

Descriptive Statistics for the Post-Experimental Survey Statements (Students' Perceptions)

Statements	*N*	*M*/5	*SD*
1. I enjoyed participating in collaborative writing tasks.	23	3.39	1.12
2. Collaborative writing tasks are useful when learning a second language.	23	3.70	1.06

Statements	N	M/5	SD
3. I appreciated receiving corrective feedback from the teacher in real time.	23	4.52	0.79
4. Receiving corrective feedback from the teacher while writing is useful when learning a second language.	23	4.56	0.59
5. Receiving corrective feedback from the teacher while writing was distracting.	23	2.39	1.41
6. Discussions with other students in the breakout rooms were useful.	23	3.87	1.22
7. It was easy to collaborate with other students during the writing task.	23	3.13	1.32
8. The technological aspect of this activity was user-friendly.	23	4.21	0.67
9. Before these writing tasks, I had already taken part in online collaborative writing tasks.	23	2.91	1.65
10. The first writing task was a good experience.	23	3.87	1.06
11. The second writing task was a good experience.	23	3.52	1.16
12. I would like to take part in more collaborative writing tasks in the future.	23	3.30	1.29
13. I would recommend this activity for other language classes.	23	3.91	1.04

The results displayed in Table 1 indicate that participants had generally positive views about their experience of receiving SWCF during CW tasks. The perceptions of the items related to CW (Statements 1, 2, 6, and 7), while positive, were closer to neutral than the perceptions of the items related to SWCF (Statements 3 and 4). Synchronous written corrective feedback was overall "enjoyed" (see Statement 3: $M = 4.52$, $SD = 0.79$, 91% strongly agreed or agreed with the statement) and perceived as more "useful" (see Statement 4: $M = 4.56$, $SD = 0.59$; 97% strongly agreed or agreed with the statement). Participants viewed the two tasks as easy to conduct online ($M = 4.21$, $SD = 0.67$; all participants strongly agreed or agreed with the statement, except for three, who had a neutral opinion) and did not find SWCF particularly distracting. However, differences were observed between individuals ($M = 2.39$, $SD = 1.41$; while 61% disagreed or strongly disagreed that SWCF was distracting, 22% disagreed or strongly disagreed). At times, "organizing all of the different ideas" (S15) as a group proved "difficult" (S3, S11, S20), especially in groups where students have "different native languages and cannot understand French with their accent," according to survey comments. While both tasks were mostly rated "a good experience" (Statements 10 and 11), the second task was perceived as slightly less positive than the first (65% and 57% strongly agreed or agreed with the statement, respectively). Due to absenteeism in a couple groups during the second task, one instructor had to slightly alter the group composition, which according to two students was "difficult" because "people

didn't know each other as well" (open-ended question). Finally, while results indicated that students were close to neutral regarding repeating the experience (Statement 12: $M = 3.30$, $SD = 1.29$), less than one third of participants disagreed or strongly disagreed with the statement, while nearly half agreed or strongly agreed that they would be willing to repeat it. Most participants recommended implementation in other FSL courses (Statement 13: $M = 3.91$, $SD = 1.04$, one student strongly disagreed with the statement). Overall, respondents felt that incorporating SWCF to CW tasks "has potential" (S8) and is "very helpful" (S17) (open-ended question).

Since not all items were normally distributed, a non-parametric test (Spearman's rank-order correlation) was used for the correlative analysis, which remains exploratory (Table 2). Based on Abrams (2019), the effect size of $r = .10$–$.29$ as small, $r = .30$–$.49$ as medium, and $r = .50$–1.0 as large. Findings indicate that while SWCF items were highly rated in the survey, overall task enjoyment (Statements 10-11) is more strongly related to enjoying CW ($r = .60$ for Task 1, $r = .81$ for Task 2) and finding CW useful ($r = .59$ for Task 1, $r = .68$ for Task 2) than enjoying SWCF (no significant relationship for Task 1, $r = .50$ for Task 2) or finding SWCF useful ($r = .46$ for Task 1, no significant relationship for Task 2). This points to the predominant role of enjoyable collaborative dynamics in the shaping of positive perceptions of SWCF provided during videoconferenced CW tasks.

Table 2

Correlations for the Post-Experimental Survey Statements (Students' Perceptions)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Statement 1	-												
Statement 2	.60**	-											
Statement 3	.51*	.33	-										
Statement 4	.25	.42*	.34	-									
Statement 5	.04	.16	.48*	.25	-								
Statement 6	.41	.51*	.09	.03	-.08	-							
Statement 7	.71**	.70**	.44*	.39	.20	.77**	-						
Statement 8	.23	.47*	.13	.17	.38	.30	.42*	-					
Statement 9	-.04	.38	-.04	.22	.26	.24	.21	.21	-				
Statement 10	.60**	.59**	.37	.46*	.14	.30	.54**	.59**	-.001	-			
Statement 11	.81**	.68**	.50*	.33	.25	.55**	.83**	.51*	.12	.72**	-		

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Statement 12	.77**	.82**	.43*	.27	.17	.52*	.71**	.37	.22	.56**	.77**	-	
Statement 13	.71**	.85**	.32	.52	.23	.57**	.77**	.49*	.19	.65**	.78**	.84**	-

Note. *p < .05. **p < .01.

Similarly, willingness to repeat the experience (Statement 12) is significantly correlated with finding CW useful (*r* = .77) and enjoying CW (*r* = .82), but to a lesser extent with enjoying SWCF (*r* = .43) and is not significantly correlated to finding SWCF useful. Recommending such tasks for other FSL courses (Statement 13) is also significantly correlated with enjoying CW (*r* = .71) and finding CW useful (*r* = .85), but not statistically correlated with enjoying or finding SWCF useful. In sum, while learners had very positive views of SWCF overall (Statements 3 and 4), those who enjoyed CW and had positive beliefs about CW were more likely to recommend the tasks. Interestingly, the degree of previous experience with computer-mediated CW (Statement 9) does not significantly correlate with any item.

Stimulated Recall Interviews

Content analysis of stimulated recall interviews confirms that participants generally had positive perceptions despite variable group dynamics. The combination of CW and SWCF appealed to several participants, as exemplified by the following comment: "The most positive [aspect of the experience] was the professor's comments and working together to create ideas" (S8). Participants mentioned that thanks to SWCF, they "knew exactly what *their peers* were trying to say when they corrected [the errors]" (S8), which is not the case with traditional written corrective feedback, as they usually receive feedback "two weeks later" (S1, S2, S3, S4, S6). Synchronous written corrective feedback helped learners to get some errors "out of the way" (S7) and avoid repeating them in the rest of the text (S1). While six interviewees reported enjoying SWCF on grammar (e.g., verb conjugation, gender agreement), vocabulary (e.g., word choice), and syntax (e.g., clause structure, word order), only one suggested that more feedback be provided on text organization.

Indirect SWCF combined with synchronous oral peer collaboration on Zoom "sparked discussions" (S10) and led to "debates" (S5), which were perceived as conducive to learning. As one student put it, "it was cool because when you got the feedback, you could talk to your peers about it as well… so you are getting kind of a double feedback" (S1). Indirect SWCF was also better perceived than direct SWCF, as another participant explained: "It was really good not to give right away the answer, but just a small push or nudge to think again about the sentence" (S6). Peer collaboration helped put students' resources together and obtain "the best of everyone in each sentence" (S1). It also provided "support" and helped to maintain focus on the task (S9).

The task format (a combination of Zoom and Google Docs) felt "normal" (S7, S8) and facilitated group communication. None of the interview participants reported encountering technology-related difficulties while completing the tasks. While group size generally felt appropriate, working in a larger

group (4-5 students) felt "not even feasible" (S7) for a couple students, who would have preferred groups of 2 or 3. Reaching consensus when addressing SWCF and "getting ideas together" without being "all over the place" (S9) were perceived as the main challenges of the tasks, especially given the "time constraint" and the fact that it could be "awkward" to express disagreement with a peer (S8). Table 3 provides an overview of participants' perceptions.

Table 3

Summary of Students' Perceptions About SWCF in Video-Mediated CW Tasks

Themes	Benefits	Challenges
SWCF	Immediacy allows learners to do the following: - remember the idea being conveyed at the time of addressing feedback (vs. delayed CF) - deal with errors right away and therefore avoid future errors in the text - pay more attention to CF (form and meaning) and therefore better remember new words Engagement allows learners to do the following: - improve their text while feeling part of a team - engage in language-related episodes (indirect SWCF) - take more linguistic risks - stay motivated along the writing process	Clarity of feedback: difficulty to understand "what was wrong" with a word or a sentence Error treatment: possible uncertainty as to whether SWCF is satisfactorily addressed Possible (but limited) distraction from the writing process when SWCF "pops up"
Video-Mediated Synchronous Collaborative Writing	- learn from one another and improve one's L2 writing - see "other humans" and "talk" with peers - stay focused on the task by "working together" and "supporting each other" - receive both peer and teacher feedback ("double feedback")	- difficulty to work with peers with different L2 proficiency levels - difficulty to set an efficient collaborative pattern - hesitation to point out peers' errors or criticize peers' ideas - - difficulty to interpret "body language" on Zoom

Participant suggestions for future iterations targeted feedback. First, the use of more detailed forms for indirect written corrective feedback (e.g., comments with metalinguistic cues) would be beneficial to not "puzzle over" some of the highlighted errors (S10). Teachers could space out SWCF instead of adding waves of comments or highlights "all of a sudden" (S2) which, according to S4 and S7, can be "overwhelming" (during the experiment, teachers added series of SWCF as they navigated between their browser tabs). Three interviewees suggested the teacher provide less SWCF during each visit of a CW group's Google Docs but increase the frequency of the visits. This way, students would have "not ended up with all these comments [at the same time]" and would be able to process SWCF in a more digestible way (S2). Moreover, teachers should dedicate time after the task to provide "overall" feedback to the class (S6, S7), focusing on errors that students seem to "keep repeating" (S10). Other suggestions included "allotting more time" for task planning and realization (S7) as well as setting standards for SWCF (S3, S10), that is, using different colours for teachers and students, or relying on a letter-coding system to identify error types.

Discussion

To the best of our knowledge, this is the first study to explore FSL learners' perceptions of SWCF provided during two videoconferenced CW tasks completed using Zoom and Google Docs, in the context of an online course. Results point to the learning potential and feasibility of this pedagogical practice.

Research Question 1: Perceived Learning Value

In line with recent computer-mediated CW studies (Li, 2018; Ubaldo, 2021), most interviewees (60%) expressed positive views about video-mediated CW tasks including SWCF, as they found them "useful" (S7, S10) and "definitely helpful" (S1, S5) for enhancing L2 writing skills.

One perceived benefit of teacher SWCF was that it prompted discussions on form and meaning within CW groups. Immediate feedback via Google Docs enabled learners to address errors promptly and collaboratively, leveraging their linguistic resources, thus avoiding repeating them. While such a finding is not novel (e.g., Shintani, 2016; Shintani & Aubrey, 2016) since "video-mediated [videoconferenced] collaborative writing reflects the normativities of talk-in-interaction" (Balaman, 2021, p. 13), it could be argued that video-based interactions further facilitated peer interactions around SWCF. Besides, participants noted that peer discussions through videoconferencing enabled them to address both semantic and linguistic dimensions of L2 writing. In contrast to previous studies favouring teacher feedback over peer feedback, this study did not reveal such a trend (Cho, 2017; Ebadi & Rahimi, 2017).

Analysis also revealed learners' preference to focus on lexical and syntactic issues, rather than text organization, confirming Amrhein and Nassaji's (2010) results. Moreover, participants found more learning value in indirect SWCF, noting that teachers' highlights or comments gave them "a small nudge" to revise sentences (S6). This preference is in contrast with findings from Kim, Kang, Choi, et

al. (2020), which observed no distinction in the perceived helpfulness of direct versus indirect SWCF for in-person CW tasks. Divergent study designs and contexts may explain these differences. This study involves advanced FSL learners, while beginner Korean learners were examined by Kim, Kang, Choi, et al. (2020). The presence of written comments in this study might have influenced the preference for indirect SWCF, particularly with advanced learners having the metalinguistic capacity to collaboratively address it.

Research Question 2: Perceived Feasibility

The implementation of SWCF during videoconferenced CW tasks was perceived as straightforward. In line with Abrams (2019), no technology-related concerns were expressed, and learners found receiving feedback on Google Docs and discussing it through Zoom to be "user-friendly" (S9). Past CW experience did not significantly affect task enjoyment, as revealed in the post-experimental survey. The normalization (Bax, 2003) of videoconferencing resulting from the COVID-19 pandemic was evident in comments like "for me it was just a normal breakout room discussion" (S8). Given that practicality is a key element of the evaluation of computer-assisted language learning tasks (Chapelle, 2001), the results reflect the feasibility and pedagogical potential of videoconferenced CW. While acknowledging that Zoom is different from in-person interaction, participants noted the human contact was maintained during writing, emphasizing the value of seeing partners' faces (S3). This resonates with studies suggesting higher engagement and focus on video-chat interaction during CW as compared to chat-based interaction (Aubrey, 2022).

Participants mentioned challenges such as the difficulty in critiquing peers' suggestions and voicing their opinions. In other words, videoconferenced CW did not necessarily enhance perceptions of peer feedback compared to chat-based computer-mediated CW studies, in which learners often questioned the benefits of peer collaboration (Li & Zhang, 2022). Moreover, participants sometimes struggled to immediately understand what was wrong with their sentences (S8), echoing Kim, Choi, Yun, et al.'s (2020) results. Waves of SWCF were also perceived as "overwhelming" (S4, S7), potentially limiting feasibility although this might have led learners to appreciate peer collaboration. Video-based interaction could have reduced cognitive overload, as SWCF is less cognitively demanding than delayed written corrective feedback (Shintani & Aubrey, 2016). This would concur with the fact that nearly two thirds of survey respondents did not find SWCF particularly distracting (Statement 5) or that SWCF was perceived by interviewees as "a good disruption" (S6, S7) to the writing process.

Pedagogical Implications

This study has important implications for L2 teachers contemplating the integration of videoconferenced CW tasks with SWCF. First, allocating ample task time is crucial. Participants noted that time-consuming negotiations of meaning and form after SWCF often hindered text completion within class time. Educators should consider task durations that accommodate these interactions effectively. Second, teachers might establish pre-set feedback styles, using letter or colour codes for quick error identification and resolution. Enhancing indirect SWCF through written comments, like metalinguistic cues in margins, could lead to faster error resolution. Last, instructors should schedule

post-task debriefings to offer broader feedback on strengths and areas for improvement. These discussions could take place with the whole class (either in person or on Zoom) or in smaller chat rooms, as suggested by Ene and Upton (2018).

Conclusion

This study was the first to explore learners' perceptions of combining SWCF and CW in two videoconferenced tasks completed on Google Docs via Zoom. The results indicate that overall learners value this pedagogical approach as it provides them with relevant SWCF and the opportunity to collaboratively negotiate form and meaning. This alignment with prior face-to-face SWCF and CW research contributes to the field by addressing Kim, Choi, Kang, et al.'s (2020) call to examine learners' perceptions of SWCF in new contexts, as seen in our videoconferenced CW setting. The findings also show that videoconferenced CW could be a valuable alternative to conventional CW, facilitating the provision of SWCF while sparking group discussions.

A noticeable difference from earlier research lies in the preference expressed by our participants for indirect versus direct SWCF. Despite the challenges inherent in addressing indirect SWCF, participants found discussing it on Zoom to be "normal" (S7, S8), with the immediate collaboration via videoconferencing alleviating the "stress" linked to SWCF (S9). Essentially, videoconferenced CW presents an optimal pedagogical configuration combining the reduced anxiety linked to computer-mediated communication (Côté & Gaffney, 2021) and the dynamic collaboration patterns typically seen in face-to-face interactions (Kim, 2014).

While precautions were taken to enhance result validity, this two-time intervention study has limitations. In one class, time constraints led to a 5-minute reduction in Task 2, potentially impacting perceptions. Teachers' choices to focus on local issues and provide indirect versus direct SWCF may have also influenced learners' perceptions. However, the study's ecological approach strengthens its authenticity.

Based on findings, future research should investigate optimal teaching practices to support videoconferenced computer-mediated CW (e.g., examining the relevance of teacher-students videoconferenced interactions to complement SWCF). Assessing learning gains could also help to determine the most effective types and amount of SWCF. Additionally, as per Yamashita (2021), future studies should take into account learning styles and target different learning contexts.

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Appendix

Instructions for Tasks 1 and 2

Composition collaborative 1

Consignes

Étape 1 : Plan du texte
- **Prévoir 5 minutes maximum** pour faire un plan: parlez de la structure et des idées principales.

Étape 2 : Rédaction collaborative
- **Travaillez ensemble sur le même paragraphe : ne vous séparez pas les parties du texte.**
- Discutez du contenu et de la forme: si vous avez des questions sur la façon d'écrire, sur le sens d'un mot, sur l'orthographe, sur les accords, **parlez-en en équipe.**
- Vous pouvez utiliser tous les outils pour vous aider (WordReference, dictionnaires en ligne, conjugueur, etc.
- Quand vous voyez des commentaires du professeur, **discutez-en en groupe** pour corriger l'erreur.

Rédaction du texte

Vous allez travailler en groupe de 3 ou 4 pour rédiger une composition de **400 à 500 mots** en lien avec une polémique d'actualité :

Dans le contexte actuel de pandémie, certains proposent de rendre obligatoire la présentation d'une preuve de vaccination pour n'importe quelle personne souhaitant avoir accès à des services (restaurant, spectacle, voyage en avion, etc.). Le but est de permettre à la société de retourner rapidement à « la vie normale ».

Que pensez-vous de cette proposition? Rédigez en équipe un texte argumentatif pour donner votre avis.

Composition collaborative 2

<u>**Consignes**</u>

Étape 1 : Plan du texte
- **Prévoir 5 minutes maximum** pour faire un plan: parlez de la structure et des idées principales.

Étape 2 : Rédaction collaborative
- **Travaillez ensemble sur le même paragraphe : ne vous séparez pas les parties du texte.**
- Discutez du contenu et de la forme: si vous avez des questions sur la façon d'écrire, sur le sens d'un mot, sur l'orthographe, sur les accords, **parlez-en en équipe.**
- Vous pouvez utiliser tous les outils pour vous aider (WordReference, dictionnaires en ligne, conjugueur, etc.
- Quand vous voyez des commentaires du professeur, **discutez-en en groupe** pour corriger l'erreur.
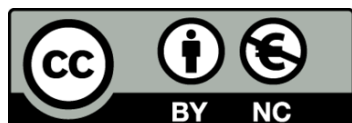
Rédaction du texte

Vous allez travailler en groupe de 3 ou 4 pour rédiger une composition de **400 à 500 mots** en lien avec une polémique d'actualité :

Hier, le gouvernement du Québec a annoncé la fermeture des gyms en zone rouge et a indiqué que le couvre-feu pourrait bientôt passer de 21h30 à 20h à Montréal. Le milieu médical a applaudi ces décisions et pousse pour encore plus de restrictions. D'autres personnes estiment cependant que la population a besoin d'air et qu'il faut accepter les risques sanitaires pour la santé mentale de tous.

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