

COLLABORATIVE WRITING: FOSTERING FOREIGN LANGUAGE AND WRITING CONVENTIONS DEVELOPMENT

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The use of social technologies, such as wikis and chats, has brought a renewed attention to L2 collaborative writing. Yet, a question that still remains to be answered is the extent to which learners' writing is enhanced when using these tools. By analyzing learners' individual and collaborative writing, this study (a) explores L2 learners' approaches to the writing task in the wikis, (b) examines learners' collaborative synchronous interactions when discussing content, structure and other aspects related to the elaboration of the writing task, and (c) describes learners' perceptions of individual and collaborative writing and their impressions of the use of social tools in the FL writing class. Analysis of the data showed that while statistically significant differences were not evident in terms of fluency, accuracy and complexity when comparing the individual and collaborative assignments, there were observable trends that inform us about how learners' interactions with the text differ when working individually or collaboratively. Further, an analysis of learners' approaches to collaborative writing through the use of social tools shows that wikis and chats allowed them to concentrate on writing components in a different, yet complementary, manner depending on whether they interacted in the wikis or in the chats.

INTRODUCTION

A wide variety of collaborative work is frequently used to develop oral skills in the foreign language (FL) classroom. In FL writing, however, peer response is the only form of collaborative work that has been widely adopted and studied since the 1990s (Hyland, 2000; Liang, 2010; Lockhart & Ng, 1995; Villamil & de Guerrero, 1996). In contrast, the practice of collaborative writing, two or more people working together to produce a document with group responsibility for the end product (Bosley, 1989), has only been cautiously trialed to date. Research into collaborative writing, both in the first language (L1) and second language (L2), has shown that this pedagogical approach has great potential; it demands reflective thinking, helps learners to focus on grammatical accuracy, lexis and discourse, and it encourages a pooling of knowledge about the language (DiCamilla & Anton, 1997; Donato, 1994; Hirvela, 1999; Storch, 2002; Swain & Lapkin, 1998).

The birth of social technologies, such as wikis and chats, has brought a renewed attention to L2 collaborative writing (Arnold, Ducate, & Kost, 2009; Elola & Oskoz, in press; Kessler, 2009; Kessler & Bikowski, 2010; Oskoz & Elola, 2010, in press). These applications facilitate authoring flexibility, content creation, and the generation of new knowledge. The open editing and review structure of wikis, for example, makes them a suitable tool to support collaborative writing (Parker & Chao, 2007). By integrating audio applications, the level of interactivity and accountability of the participants increases (Oskoz & Elola, 2010, in press; Rick, Guzdial, Carroll, Holloway-Attaway, & Walker, 2002). A question that remains to be answered, however, is the extent to which collaborative writing and the use of these tools helps learners in their writing. By analyzing individual and collaborative wiki-based writing, this study explores approaches to two writing tasks taken by a group of L2 learners. It also examines learners' collaborative, synchronous interactions as they discuss content, structure and other aspects related to the performance of the writing task. In addition, the study gathers learners' perceptions of individual and collaborative writing and their impressions regarding the use of social tools in the FL writing class.

LITERATURE REVIEW

Despite extensive research about L2 writing processes, genres, tasks and other aspects (Hyland & Hyland, 2006), less is known about the role that writing plays in L2 development. Yet, as Harklau (2002) claims, “If learners work more through written [...] sources of language, they will tend to develop the linguistic features that are associated with written registers in that particular context” (p. 339). The potential value of interacting with a text is increased when learners engage with problem-solving activities to express their ideas in their L2. In situations that require decision-making, L2 writers generally come to recognize their limitations or gaps when trying to match their linguistic knowledge to the demands of formal academic writing (Swain, 1985).

The value of collaborative writing as a means to develop the linguistic and writing conventions of a second language has also been underpinned from a sociocultural perspective (Storch, 2005; Villamil & de Guerrero 1996, 1998). Their research has noted that in a collaborative situation writers are impelled to make decisions about the language needed to express their ideas, and thus to formulate the structure in which to express those ideas as they produce a text together. Wells (2000), citing Franklin (1996), states that “knowledge is created and re-created in the discourse between people doing things together” (p. 71). Knowledge is situated in a particular activity setting and it involves individuals working together to achieve a common goal, or overlapping goals, to which they direct their efforts (Freire, 1970; Lave & Wenger, 1991; Wells, 2000; Wenger, 1998). Knowledge building thus happens in the course of collaborative meaning-making through discourse; learners progress towards their “own understanding through the constructive and creative effort involved in saying and in responding to what was said” (Wells, p. 74). Wells emphasizes that it is the “joint attempt to construct common understandings” (p. 74) that is superior to individual understandings. In this view “learning as increasing participation in communities of practice concerns the whole person acting in the world” (Lave & Wenger, 1991, p. 49). The individual participates and relates with others in an ongoing, social and interactional process; that is, members interact, “do things together, negotiate new meanings, and learn from each other” in communities of practice (Wenger, 1998, p. 102). In this learning context the instructor is no longer viewed as the only active agent of learning, the one who “deposits” knowledge into the learners; nor are learners seen as the “depositories” of knowledge (Freire, 1970). Rather, the classroom per se is envisioned as a site where new knowledge, grounded in the meaningful experiences of learners and teacher alike, is produced through dynamic interactions.

In L2 educational domains Swain (2000) points out that “when it comes to the learning of a language, the mediating role of dialogue is less well understood” (p. 110), because of the misconception that might result from the fact that “the notion of ‘language mediating language’ is more difficult to conceptualize and that it is more difficult to be certain of what one is observing empirically” (p. 110). Research in L2 learning (Donato, 1994; Ohta, 2000; Swain & Lapkin, 1998), however, has provided support for the mediating notion of dialogue and the establishment of community of practices (Hall, 1995; Mondada & Pekarek Doehler, 2004; Ohta, 1995). According to Swain (2000), it is through collaborative dialogue—dialogue that constructs linguistic knowledge when learners complete a task—that learners focus their attention on conveying their message and producing alternatives. In other words, dialogue provides learners with opportunities to use language, and also to reflect on their own language use. As a result of this collaboration, “...together [learners’] jointly constructed performance outstrips their individual competences” (Swain, 2000, p. 111). Through the act of writing collaboratively, learners engage in a dialogue that impels them to notice gaps in their L2 production and then to test new hypotheses regarding language and literacy acquisition. Further, learning is not seen just as the product of one individual's efforts, but as deeply connected to the surroundings, tools and the overall context in which the learning takes place.

Technology in Foreign Language Writing

Contemporary media and communication technologies are radically redefining our understanding of literacy (Warschauer, 1999) since their use “involves multifaceted skills and competencies, forcing us to reconceive the nature of written media and the writing activity” (Canagarajah, 2002, p. 211). In the FL classroom, tools such as chat applications and wikis are opening the doors to “more student-directed activities and the L2 learners’ journey towards self-definition and identity as a multilingual/multicultural speaker” (Blake, 2008, p. 22). These tools also “stretch the input and output limits of the FL classroom” (Ortega, 2007, p. 198) by providing environments that enhance collaborative writing (Hirvela, 1999) while presenting further opportunities for interactive and meaningful practices. When applied to L2 writing, asynchronous and synchronous tools, such as wikis and chats, stress the social dimension of the writing process by allowing learners to participate in a social process of writing (Brown & Adler, 2008).

Wikis provide learners with a tool to create, transform, and erase their work with built-in accountability. At the same time, the wiki tracking system allows teachers and researchers to follow the writers’ collaborative processes by examining what changes are made, who is making them, when and how often. Because the flexibility of this software facilitates communication between learners and promotes the shaping and sharing of knowledge when working collaboratively, wikis have attracted the attention of a wide variety of educators in distance learning courses, hybrid and face-to-face courses (Byron, 2005; Farabaugh, 2007; McLoughlin & Lee, 2007; Parker & Chao, 2007; Trentin, 2008), in English as a second language and English rhetoric courses (Chang & Schallert, 2005; Wang, Lu, Yang, Chiou, Chiang, & Hsu, 2005), and in FL courses (Arnold, Ducate, & Kost, 2009; Honegger, 2005; Kessler, 2009; Kessler & Bikowski, 2010; Oskoz & Elola, 2010, in press).

Recent studies in FL education have suggested that the collaborative nature of the wikis provides learners with an environment in which, if not always totally collaborative (Arnold et al., 2009), learners engage in content development (Kessler, 2009; Oskoz & Elola, 2010). In contrast with individual writing, where learners tend to focus on local aspects such as grammar, collaborative writing via wikis allows them to focus more strongly on structure and organization (Oskoz & Elola, 2010). Regarding accuracy, there are some conflicting results. Kessler found that, as long as grammatical errors did not interfere with meaning, learners were not particularly concerned with the accuracy of their writing, whereas Lee (2010) found that learners did collectively address language errors at the sentence or word level in meaning-driven activities. Arnold et al. (2009) also found that learners gave linguistic feedback and made adjustments to each other’s errors three-quarters of the time. These divergent results when using wikis echo Ware and O’Dowd’s (2008) findings on discussion-board writing in bicultural interactions. When examining both e-tutoring and e-partnering encounters, Ware and O’Dowd found that learners were more likely to provide feedback on form when they were encouraged to do so than when it was just suggested. In addition to cultural differences that might influence learners’ approaches to correcting partners, other reasons for the lack of feedback on form among peers (either in monocultural or bicultural settings) might be a result of learners’ excellent command of the L2, their failure to notice problems in their partners’ writing, or even their reluctance to appear critical of a partner when establishing a relationship (Lee, 2010; Ware & O’Dowd, 2008).

The collaborative value of the wiki is enhanced when accompanied by the use of synchronous Web-based text and audio applications, a combination that further increases the level of interaction and accountability of the participants (Elola & Oskoz, in press; Oskoz & Elola, 2010). Both synchronous text and audio applications have been employed as a means to engage learners in corrective feedback interactions (Lee, 2008; Morris, 2005; Pellettieri, 2000; Sotillo, 2005). These studies further support the notion that task type affects learners’ interactions (Pica, Kanagy, & Falodun, 1993). As such, tasks in which learners jointly compose a piece of discourse tend to trigger high numbers of lexical and morphosyntactic negotiations (Pellettieri, 2000).

Although still in its infancy, there is no doubt that technology “put to the use of social networks can foster second language and literacy learning that is remarkably rich in social terms” (Ortega, 2009, p. 248). Yet, little is known of the value of collaborative writing while using social tools on outcomes such as L2 development or specific L2 writing aspects, such as the mastery of specific genres. There is also a need to understand the benefits that writers obtain when working with similar tasks (e.g., same genre) while making use of these tools. Therefore, this study set out to answer three questions:

1. What are the differences between collaborative and individual writing?
2. How do writers approach collaborative writing through the use of social tools?
3. What are students’ perceptions on writing individually and collaboratively and how do they perceive collaborative work performed with the use of social tools?

BACKGROUND INFORMATION

The study reported in this article was conducted at a U.S. commuter, mid-sized East Coast university. The eight Spanish majors who participated in the study, whose ages ranged between 19 and 21, were enrolled in an advanced Spanish writing course, a three-credit, one-hour capstone of the program that is mandatory for all majors in Spanish. The learners had completed at least four courses in Spanish at the third-year level; two of those courses focused on the development of grammar and writing conventions. Six of the learners had lived abroad for one semester and, except for one student (originally from Poland and a native speaker of Polish), all the learners were native speakers of American English. The instructor had taught Spanish for four years in this institution; her goal was to develop learners’ writing skills in Spanish and expand their individual experiences through collaborative writing. To overcome the difficulties that “commuter learners” encounter in meeting face-to-face to work in groups or pairs, the instructor provided social tools that would allow them to experience a more learner-centered and interactive approach. Thereby, a media-rich environment was created to support learners’ communication activities and provide a forum for creating and revising their essays collaboratively.

For the writing assignments, the instructor and researchers decided to introduce the use of wikis for both collaborative and individual writing tasks so that learners did not have to change mediums. Because all their assignments were stored centrally, the instructor was able to access the different drafts easily, to identify any problems the students may have had and provide feedback. The instructor selected [PBwiki](#) over other free wikis, such as [MediaWiki](#) or [Google Docs](#), due to its ease of use and sophisticated methods of tracking user activities. The university’s system of text-based and voice chats were chosen as complementary tools because they allowed for easy recording of learners’ interactions. Learners were trained in the use of the wikis and in both oral and written chats. Given that students had completed the same courses, the instructor was able to pair the students randomly during the training sessions. After a period of familiarization with these tools, in which assignments were not graded, the instructor rearranged pairings to match as closely as possible the learners’ proficiency levels.

PROCEDURE

The class met one evening a week for two-and-a-half hours. During class learners worked on grammar exercises and managed organizational and structural issues regarding different written genres with the help of the textbook, *Gramática para la composición* (Whitley & González, 2000). The textbook follows a widespread trend in FL writing instruction in the U.S, one which has been influenced to some degree by practices common in L1 writing instruction (Reichelt, 2009). The instructor used the textbook to illustrate genre and writing conventions and as a platform to introduce Spanish linguistic elements. In addition, in-class discussions took place about the topics of the writing assignments; these originated from the textbook or from ideas suggested in the classroom. Therefore, learners’ interactions dealt with issues

related to language, structure, organization and content. Learners completed each writing assignment in 15 days (see Table 1 for schedule); for each writing assignment learners turned in a first version (Draft 1) and a final revised version (Draft 2).

Table 1. *Schedule and Activities*

Schedule	Activities
Week 1, Day 1	Learners discuss the topic, organization and structure in class.
Week 1, Days 2–5	Learners work on writing assignments using wikis and chats.
Week 1, Day 5	Draft 1 using wikis is turned in.
Week 1, Days 6–7	The instructor provides comments regarding content, structure and form in the wikis (within two days).
Week 2, Day 1	In class, learners and the instructor comment on a few of the learners' essays, reading for content, structure and accuracy.
Week 2, Days 2–7	Learners continue working on their writing assignments using both wikis and chats.
Week 3, Day 1	Learners complete the writing assignment (Draft 2) in the wikis.

First, learners and instructor discussed the given topic and the organization and structure of the particular genre together in class. After brainstorming ideas, learners, either in pairs for the first writing piece (the role of men and women in Latino societies), or individually for the second piece (the effects of globalization in the Latino world), had five days to complete Draft 1 of the assignment in their wikis; this allowed for flexible scheduling of their working time. The instructor then provided feedback via the wikis regarding content (creation, elaboration and deletion of ideas), structure (genre general features), organization (order and flow of ideas within a paragraph) and form (error correction). During the following class, the instructor and learners looked at a few anonymous examples of student writing to discuss and revise key points about content, structure, organization and form. After this class learners revised and completed the assignment, Draft 2, during the following week.

For the purposes of this study, learners completed two argumentative essays: the first one collaboratively and the second one individually. Each essay followed the same procedure. By allowing a couple of weeks to complete the assignment, the teacher gave learners ample opportunity to reflect on the topics and to fully consider both essay structure and linguistic issues. Each student approached the assignments differently (i.e., some revised more or added more information than others), and so the number of wiki drafts they created varied (ranging from 15 to 100 drafts). When working collaboratively learners accessed the wikis from multiple sites and communicated through chats. In the chats learners interacted a minimum of twice when working collaboratively, once before starting to work in the wiki, and again after receiving the instructor's feedback. One of the pairs engaged in chat one additional time, and another pair two more times. Three pairs chose written (text-based) chats, while the remaining pair used voice chats (see Table 2), which were transcribed to facilitate analysis. Conversations ranged from one to two hours in duration. Although learners were not obligated to communicate any specific number of times, or to address any specific topics, they were asked to discuss essay content, organization and form in Spanish.

Table 2. *Social Tools Employed by the Pairs*

Pairs	Social tools employed
Pair 1	wiki + written chat
Pair 2	wiki + written chat
Pair 3	wiki + written chat
Pair 4	wiki + oral chat

At the start and completion of the course learners completed two questionnaires (consisting of 5-point Likert scale questions with added space for explanations) regarding their perceptions about individual and collaborative writing. The questionnaire also addressed learners' perceived use of wikis and voice or written chat tools for writing purposes.

ANALYSIS

Essay drafts, questionnaires, wiki drafts and chats were analyzed to ascertain the differences between individual and collaborative work and to explore the potential use of social tools for FL writing.

Learners' Essays (Drafts 1 and 2)

Draft 1 and Draft 2 were coded for *fluency* (measured by number of words and number of T-units used), *accuracy* (the percentage of error-free T-units) and *complexity* (the percentage of words per T-unit and subordinate clauses per T-unit). T-units consist of one main clause plus a subordinate clause attached to or embedded in it (Hunt, 1965). The T-unit has been adopted as a measure in previous research on writing (Arnold et al., 2009; Polio, 1997; Spelman Miller, 2006), and it was considered to be the most appropriate way to code and record changes regarding fluency, accuracy and complexity among different drafts. The inter-rater reliability score for all the measures was at or above 0.95.

Questionnaires

The researchers analyzed the responses pertaining to how learners perceived their work when writing individually and collaboratively. They also assessed and quantified learners' perceived value of the wikis and chats as a tool for collaboration.

Wiki Drafts and Chats

Categories were assigned to the data based on meaningful segments that reflected the objective of the research (Merriam, 1998). The two researchers individually read one of the transcripts of a chat and one set of wiki drafts (as recorded in the history feature of the wikis), marked every point that revealed information relevant to the study and wrote comments. There was a common category of essay-related aspects (content, organization, structure, grammar, vocabulary, punctuation and references) in wikis and chats. An additional category of interaction-related aspects (asking for opinions, dividing the work, planning the task, providing feedback, showing agreement or disagreement) was found in chats. The researchers achieved an inter-rater reliability score of 0.96. Finally, all the writing episodes (e.g., content) were quantified and percentages were calculated to compare how the learners approached the writing and how they worked via the wikis and chats.

RESULTS

This section reports (1) the differences between collaborative and individual writing when looking at Draft 2 (the final version), (2) the differences between Draft 1 and 2 when working collaboratively and individually, (3) differences between individual and collaborative performances in the wiki drafts, (4)

learners' interactions in the chats, and (5) learners' perceptions as expressed in their questionnaire responses.

(1) The first analysis examines Draft 2 texts for differences between collaborative and individual writing by analyzing variations in fluency, accuracy, and syntactic complexity. Independent *t*-tests and non-parametric Mann Whitney U tests were conducted for these three measures. There were non-significant results in all of the three measures, which might be a reflection of the low number of participants.

(2) The second analysis compares learners' individual and collaborative performances between Draft 1 and Draft 2 texts; there were some noticeable trends with regard to fluency and accuracy. When working individually, the paired *t*-tests showed a significant increase in fluency (total words) ($p = 0.014$), and accuracy (% correct) ($p = 0.011$) from Draft 1 to Draft 2. When the Wilcoxon test was used, fluency (total t-units) ($p = 0.043$), fluency (total words) ($p = 0.017$) and accuracy (% correct) ($p = 0.012$) also showed significant increases from Draft 1 to Draft 2 for the individually written essays. A close examination of the essays indicates that learners working individually paid attention to local aspects related to grammar. As seen in the following example, learners also included extra information in Draft 2 to support their ideas, focusing on presenting new information not seen in Draft 1 (see [Appendix A](#) for a translation).

Draft 1

La cuestión de la oferta de la labor es una que aparece muchas veces en los debates económicas sobre la inmigración. Conforme a algunos economistas, en concreto George Borgas, un inmigrante cubano y profesor de la economía y la policía social, los trabajadores inmigrantes reducen los salarios por un 4% para los hombres nacidos en los EE. UU. (Kerper). Además, para los hombres sin un diploma de la escuela secundaria, los salarios disminuye por un 7.4% (Kerper). Al contrario a esta conclusión, según Marks los inmigrantes no dañan la economía, sino que ayudan la economía.

Draft 2

La cuestión de la oferta de la labor es una que aparece muchas veces en los debates económicos sobre la inmigración. Algunos economistas apuntan varias consecuencias negativas con un aumento grande en la oferta de la labor como resultado de una afluencia de los inmigrantes. Según George Borgas, un profesor de la economía y la policía social, los trabajadores inmigrantes reducen los salarios por un 4% para los hombres nacidos en los EE. UU. y para los hombres sin un diploma de la escuela secundaria, los salarios disminuye por un 7.4% (Kerper). Por lo tanto, a menudo este efecto es temporáneo y al nivel local. Además, comparado con los beneficios numerosos de este aumento de la oferta del la labor, esta competición limitada no es tan significativa. Marks, un miembro del Comité del estudio de la inmigración, destaca algunos de tales beneficios a la economía.

When the students worked collaboratively, neither the *t*-tests nor the Wilcoxon tests showed significant changes from Draft 1 to Draft 2 for any of the three measures. However, by looking at the differences between the mean scores of learners' accuracy when they worked collaboratively, it was evident that the difference between Draft 1 and Draft 2 was greater for the collaborative group (12.67) than for the individual group (10.92). Therefore, despite the non-significant results, this shows that accuracy remained a concern for learners writing collaboratively. When looking at fluency, Draft 2 did not add substantially to the number of words used, sometimes even reducing their number to achieve greater precision of meaning; a close examination reveals that learners had worked on their ideas and considered how to express them better (see [Appendix B](#) for a translation).

Draft 1

En Perú el 70% de los delitos denunciados son cometidos por hombres que pegan a sus compañeras mientras que investigadores en un estudio del año 2005 han concluido que el 52% de las ciudadanas nicaragüenses sufrieron en ese año alguna agresión por los hombres con quienes conviven y tienen una relación de intimidad y confianza.

Draft 2

El machismo hace daño en Latinoamérica tanto literalmente como metafóricamente. Además de impedir el desarrollo de la mujer en la sociedad el machismo está muy vinculada con el abuso doméstico.

(3) The third analysis examines how learners focused on various writing components while working individually and collaboratively in the wikis. Table 3 shows the seven writing components most frequently identified, either for collaborative or individual writing: these are content, editing, grammar, organization, references, structure and vocabulary.

Table 3. *Analysis of the Elements Most Frequently Identified in Pair and Individual Work via Wikis*

Collaborative	Content (36.03%)	Organization (14.72%)	Editing (13.52%)	Grammar (12.61%)	Vocabulary (10.51%)	Structure (7.81%)	References (4.80%)
Individual	Content (36.96%)	Organization (11.68%)	Grammar (11.68%)	Editing (11.28%)	Structure (10.89%)	Vocabulary (8.95%)	References (8.56%)

As seen in Table 3, learners focused primarily on content and organization, either when working collaboratively or individually. Content and organization were followed by editing and grammar, although not in the same sequence. These categories were followed by vocabulary and structure, again in a different order. References was the least addressed category, although learners worked on the references more frequently when working individually than when working collaboratively.

Several interesting aspects emerged when comparing individual and collaborative wiki-assisted writing. With regard to structure, when working collaboratively, problems with essay structure were usually addressed at the beginning of the joint work, thus establishing the thesis, supporting evidence and conclusion as a structural framework. When working individually, learners constantly revisited their essay structure as they completed several drafts. When working with organization, however, learners working individually tended to define the thematic sentences of their paragraphs in the first drafts, and then to work the paragraph around the established thematic sentence. When working collaboratively, while still defining thematic sentences at the outset of the writing, learners were more likely to change them in the course of developing and elaborating the essay content with their partner. Finally, when working individually, learners tended to use the final drafts to focus on the editing of grammar and vocabulary. When working collaboratively, while still dedicating specific drafts to work on such aspects, these adjustments were more dispersed and appeared at many different points in the writing process. With regard to references, learners (either working individually or collaboratively) followed a very similar approach, addressing these at the beginning stage of the essay. This consistent approach shows that all learners gathered the source material for their essay at the initial stages of their writing.

(4) The fourth analysis focused on the chats, which were analyzed to understand how writers approached collaborative writing through the use of social tools. Analysis of the chats reveals categories that focused on (a) components of the essay, and (b) types of interaction between participants. As seen in Table 4, the content of the essay triggered most of the negotiations that occurred in the chats (51.94%), followed by suggesting methods of structuring (15.55%) the information that they had collected. Learners also shared

the sources (14.84%) of the information to back their argument and discussed some grammatical (7.77%) aspects of the essay. Learners also spent some time discussing the organization (6.71%) of the essay, finding the appropriate vocabulary (2.12%) and editing (1.07%) some specific aspect of the essay.

Table 4. *Analysis of the Elements Most Frequently Identified in Pair Work via Chats*

Categories	Content (51.94%)	Structure (15.55%)	Sources (14.84%)	Grammar (7.77%)	Organization (6.71%)	Vocabulary (2.12%)	Editing (1.07%)
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The analysis also illustrated the types of interaction, such as showing agreement or task planning, observed among the participants in the chats when discussing different aspects of their writing (see Table 5).

Table 5. *Analysis of the Interactions Most Frequently Identified in Pair Work via Chats*

Interactions	Showing dis/agreement (44.10%)	Planning task (16.92%)	Providing opinion (15.90%)	Providing feedback (11.79%)	Dividing the work (11.28%)
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Across all of their interactions learners tended to show agreement or disagreement with their partner's opinions or suggestions 44.10% of the time. Once they had agreed on topic and structure, learners then planned how to conduct the task (16.92%). Learners also asked each other's opinions (15.90%) as they worked together. In the chat sessions there was a clear emphasis on providing feedback (11.79%) to each other on content and structure as a way to move forward in the assignment. Learners (usually at the end of the chat sessions) also discussed dividing up the work (11.28%) because although they were working collaboratively, some of the composing process was also carried out individually.

Student Perceptions of Individual and Collaborative Writing

The researchers analyzed students' responses in the questionnaires to understand students' own perceptions on (a) how they write individually or collaboratively, and (b) the usefulness of technology for collaborative writing with regard to grammar, content and structure.

Although writers perceived individual and collaborative writing in a different manner according to their individual preferences, difficulties or successes, their perceptions showed some common trends. In relation to individual writing, the learners preferred to write by themselves for the following reasons: to develop a personal style in Spanish; to handle content, organization, vocabulary and grammar issues without having to defend their choices to others; to avoid disagreements with their partners (e.g., conflicting visions for the paper); and to work on their own time schedule. When working collaboratively, learners realized that the analysis and critique of their ideas enhanced not only the content but also the overall quality of their essays. Learners became aware that everybody brought to the projects a unique set of skills and that often they could learn more from correcting their partner's grammar and critiquing their ideas than from their own work. In addition, structure and organization improved because the discussions allowed learners to concentrate on a thesis for their essays and support that thesis in a more organized manner. Although there were contradictory perceptions about correcting each other's grammar successfully, overall learners liked working with others for the extra editing assistance that their partners could offer.

Potential Benefits of the Use of Wikis and Chats When Working Collaboratively

The questionnaires also provided information about whether the use of social tools was seen by learners as beneficial to their writing in terms of grammar, content and structure (see Table 6). Before starting to use wikis and chats, the majority of learners saw the potential benefits of using wikis as a means to

improve their essays in terms of grammar, content and structure, and they thought that chats would help them to reflect on content and structure. Opinions on the value of chats for grammar development were evenly divided.

At the end of the semester learners' opinions about the benefits of wikis for grammar improvement were evenly divided between agree and disagree. Those who claimed to have benefited from the wikis realized that their partners could often identify and correct mistakes despite the fact that they did not always revise and proofread together. With regard to content development, all the learners agreed or strongly agreed about the usefulness of the wikis. In relation to essay structure, most learners felt that working in the wiki was very helpful, especially because the wiki approach required learners to create an outline together before starting to write.

Table 6. *Student Responses to the Value of Wikis and Chats for Grammar, Content, and Organization*

Questions	Strongly agree	Agree	Disagree	Strongly disagree
Using the wiki to work collaboratively with my partner improved my written grammar.	10%	90% 50%*	50%	
Using the wiki to work collaboratively with my partner improved the content of my writing.	10% 10%	80% 90%	10%	
Using the wiki to work collaboratively with my partner improved the structure of my writing.	10% 30%	90% 50%	20%	
Using the written/voice chat to work collaboratively with my partner improved my written grammar.		50% 30%	50% 70%	
Using the written/voice chat to work collaboratively with my partner improved the content of my writing.	10%	80% 90%	20%	
Using the written/voice chat to work collaboratively with my partner improved the structure of my writing.		70% 90%	30% 10%	

**Bold percentages represent the results of the second questionnaire. The other percentages relate to the results of the first questionnaire.*

As in the case of wikis, chats were not perceived as the ideal vehicle for discussing and improving grammar; they were, however, regarded as highly beneficial for the exchange of ideas and structuring of the essay, despite certain technical problems encountered when using the voice chat. Learners generated ideas and shared them with the intention of creating a more complete text. As seen in the following example of a written chat (presented as written by the learners), learners challenged their co-author's ideas, were obliged to explain their own ideas to their partners, contributed additional ideas after listening to each other and then finally presented stronger arguments in their essays.

Lauren: despues de pensar anoche, no creo que sea posible arguir que el machismo es causada por una razon

after thinking about it last night, I don't think it's possible to argue that sexism is caused by only one thing

Monica: pero violencia domestica no es un argumento, no es una posicion. yo no quiero argumentar que si existe el machismo para nada

but domestic violence isn't an argument, it's not a point of view, I don't want to argue about whether sexism exists at all

Lauren: eso es mi opinion: podemos argumentar que el machismo existe a traves de sus consecuencias, como el abuso contra mujeres, o la desigualdad en el sector laboral, o cualquier cosa.

this is my opinion: we can argue that sexism exists through its consequences, like abuse against women, or workplace inequality, or anything like that.

Monica: pero el problema que tengo con esto si escogimos el abuso solo tenemos una razon que demuestra que el machismo existe. solo podemos decir que existe porque hay violencia y no hay mas para apoyar al argumento que existe el machismo. creo que si vamos a argumentar que existe el machismo necesitamos muchos hechos para apoyar el argumetno

but the problem that I have with that is this: if we select abuse, we only have one reason that demonstrates that sexism exists. We can only say that it exists because there is violence and there's nothing else to support the argument that sexism exists. I think that if we are going to argue that sexism exists we need a lot of facts to support our argument

Lauren: vamos a hacer una lista por que creemos que todavia existe. tal vez puede ayudarnos en elegir un tema, desigualdad en el trabajo, la division de deberes en la casa...

we'll have to make a list of reasons why we think it still exists; maybe that can help us select one topic, inequality in the workplace, the division of chores at home...

Monica: ok si quieres hacer abuso domestico podemos argumentar que el machismo causa el abuso domestico porque el abuso domestico no es suficiente para argumetnar que si existe el machismo

OK, if you want to do domestic abuse we can add that sexism causes domestic abuse, because domestic abuse isn't enough to argue that sexism exists

Lauren: ok, de acuerdo: el abuso domestico es una consecuencia del machismo.

OK, I agree: domestic abuse is a consequence of sexism.

In the excerpt above, Monica and Lauren discuss the main argument of the projected essay and how to support it. Domestic violence was a recurrent topic in their previous interactions and one of great interest to Lauren. However, Monica, while not disregarding the topic, challenges the idea that domestic violence should be the major theme of their essay; she reasons that the incidence of domestic violence does not in itself support the hypothesis that sexism exists. After listening to Monica, Lauren suggests that they should make a list of examples that show that sexism is prevalent in society, such as inequality in the workplace or in division of work in the home. At that point Monica concedes that domestic abuse,

Lauren's topic of interest, can be in that list as a consequence or example of sexism in society. At the end of the above exchange Lauren agrees that domestic violence is a consequence of sexism and not the cause of it.

DISCUSSION

Research Question 1

The first research question of this study explores the potential differences between collaborative writing and individual writing when using wikis and chats. Because of the low number of learner participants, statistically significant differences were not evident in terms of fluency, accuracy and complexity when comparing both assignments. Although there were no significant differences in the measure of complexity with regard to fluency and accuracy, there were observable trends that inform us about the learners' interactions with the text when working in either the individual or the collaborative mode.

Working in either mode learners paid attention to local aspects related to grammar, suggesting an expected concern for accuracy (Hyland & Hyland, 2006). However, as seen in the wiki drafts, learners approached the grammatical accuracy of their essays differently, depending on whether they worked by themselves or with a partner. When working individually, learners preferred to polish their text (grammar, editing, vocabulary) towards the end of the writing process, when the text was almost completed; when working collaboratively, learners tended to work and polish the essays (grammar, editing, vocabulary) during the course of developing the multiple drafts. This difference in the correction pattern could be due to the fact that in the collaborative mode the learner has a reader, and this encourages him/her to pay attention to grammatical accuracy as when composing multiple drafts. This finding seems to conflict with learners' own perceptions that the collaborative work in the wikis did not help them to improve their grammar. Nevertheless, it was evident that learners expressed a preference to work with grammar on their own, which partially supports Kessler's (2009) results that as long as grammatical errors did not interfere with meaning, learners working collaboratively in the wiki were relatively unconcerned with the accuracy of their partner's writing. It is interesting to note that learners in our study primarily fixed language problems when completing their assigned sub-tasks and corrected their partner's to a lesser extent—a finding which differs from Arnold et al. (2009), who found that learners corrected each other's errors frequently, and Lee (2010), who found that the mutual scaffolding supplied by the wiki fostered the improvement of language accuracy. Similarly to Ware and O'Dowd's (2008) observations in bicultural interactions, and as stated in the surveys, in the present study learners did not readily notice problems in their partners' writing, tended to overlook grammar in favor of content and structure, or thought it inappropriate to discuss grammar because perceived criticism might threaten the establishment of a good working relationship. Yet, the instructor eventually received an accurate essay that, as observable in the wiki-produced drafts, was the product of the partners' joint effort.

Regarding fluency, as mentioned in the results for individually written essays, Draft 2 showed a statistical increase in the quantity of words and T-units used. A closer examination showed a direct connection between the measure of fluency and content. As observed in the wiki drafts (see [Table 3](#)), while all learners put a great effort into content development, there were quantitative and qualitative differences in how they approached the writing task. When working individually, the generation of ideas played a central role during the two revision sessions, whereas when working collaboratively, learners benefited from mutual interaction, not by generating more content per se, but by reworking, refining and fine-tuning the content already written. In other words, when working collaboratively, learners focused their attention on producing alternatives to, and improved versions of, their previous texts.

Regarding structure, there was also a qualitative difference in how learners approached the task. In the individually-produced wiki drafts learners defined their thesis and worked on the essay structure throughout the entire writing process. When working collaboratively, learners established the structure

early in the initial wiki drafts. It appears that learners had discussed structure and organization early in the chats and that the collaboratively-created outlines then provided a structural foundation at the beginning of the writing process. As stated by some participants in the surveys, wikis and chats did help them to develop and improve the content and structure of their essays. As observed in the wiki drafts, learners played with structure and organization, switching paragraphs and sentences around; in their chat interactions they also discussed extensively the content, structure and organization of the essay. Thus, the wikis and chats became an interactional arena where learners were helped to reflect on and engage with the L2 writing task. This reflective space also promoted further linguistic development as well as better understanding of particular writing conventions. The constant elaboration of both local and global aspects of the essay over the entire writing process provided learners with further valuable opportunities for L2 development (Harklau, 2002; Ortega, 2007).

Research Question 2

The second research question sought to explore the action of writing collaboratively with the use of social tools; results show that wikis and chats brought different benefits to a range of L2 writing components. As seen in Table 7, the writing component mentioned most frequently, both for wikis and chats, is that of content.

Table 7. *Analysis of the Elements Most Frequently Identified in Pair Work via Wikis and Chats*

Wiki	Content (36.03%)	Organization (14.72%)	Editing (13.52%)	Grammar (12.61%)	Vocabulary (10.51%)	Structure (7.81%)	References (4.80%)
Chat	Content (51.94%)	Structure (15.55%)	Sources (14.84%)	Grammar (7.77%)	Organization (6.71%)	Vocabulary (2.12%)	Editing (1.07%)

There was, however, a qualitative distinction between wikis and chats in how students approached content development. When interacting in the chats learners' conversations focused on topic development (i.e., on what to write about), while in the wiki learners proceeded to reformulate the content of ideas previously discussed in the chats. Overall, learners used the chats to discuss the structure, the thesis and the overall division of the essay into introduction, body and conclusion, whereas in the wiki learners generally worked on the organization at the paragraph level, focusing on thematic sentences and internal coherence of ideas within a paragraph. Through the chats learners addressed specific concerns in real time, often searching for information together, looking for sources and dividing the work, while at the same time moving towards agreement on the major issues; in other words, a significant benefit of using the chats was that it encouraged a structured approach to the essay writing. Wikis, on the other hand, allowed learners to focus on grammatical detail and matters of editing, such as fine-tuning of vocabulary choices. Thus, through the collaborative dialogue fostered by wikis and chats, learners constructed knowledge and created a specific "community of practice." Constant interaction with their partners impelled learners to notice issues related to the linguistic and writing conventions of the target language (Swain, 2000; Wells, 2000) and provided scaffolding for this to occur in a polite, structured manner. As seen in Lauren and Monica's chat interaction regarding the main thesis of the essay (see Results section), learners pushed each other to analyze their main and supporting ideas and so ultimately to reach a higher level of performance in their essay. Echoing Wells (2000), this example shows how, in their attempt to achieve a common goal, Monica and Lauren directed their efforts to choosing an appropriate argument for the basis of their essay. Through their collaborative dialogue, not only did Monica and Lauren complete the task, but by the exchange of alternative theses (in a kind of scaffolding), they also achieved a result beyond what they would have achieved by working on their own (Swain, 2000). This new approach of paying attention to issues at the discourse level is extremely significant to FL classroom research and teaching because the tendency in this area has been to revise and edit at the sentence level. This probably occurs

because of learners' L2 limitations or their lack of expertise with diverse genres, or because they may think that the instructor is mostly interested in the accuracy of the text and not so much in the content of the text as a whole (Hedgcock & Lefkowitz, 1994; Porte, 1996, 1997). At the same time, learners' attention to local aspects, such as vocabulary and grammar, supports the idea that collaborative interaction can also foster language awareness and consequently L2 development (Harklau, 2002; Ortega, 2007; Swain, 2000).

Research Question 3

The final research question sought learners' perceptions about the experience of working with wikis and chats, collaboratively or individually. Although all the learners expressed a liking for writing individually, because this allowed them to manipulate the text to suit their personal style and to work within their own schedule, all the learners noted that when working collaboratively the overall quality of their work improved. Although learners still preferred to focus on the local aspects, such as accuracy or vocabulary, of their own sub-texts, all learners acknowledged that working with a partner allowed them to develop a more finely tuned thesis and to develop a better structured and organized essay. This supports Wells' (2000) suggestion that learners jointly construct a performance that surpasses their individual competences. The content and structure also improved because learners were able to construct an ongoing dynamic process of discussion and negotiation (Hirvela, 1999). Learners' comments in the questionnaires highlight the view that collaborative performance could surpass the individual (Swain, 2000; Wells, 2000). Learners' own emphasis on improved content development thus illustrates how both the instructor's and their own concerns about linguistic accuracy are minimized in favor of other learning goals. In addition, learners' positive perceptions about the use of chats and wikis confirm previous findings that support the use of social tools, especially for content development (Arnold et al., 2009; Kessler, 2009; Lee, 2010).

It is essential to state here that while the use of social technology tools can reinforce student learning, they do not always lead to positive learning results (Lindblom-Ylänne & Pihlajamäki, 2003). In any educational setting it is important to evaluate carefully the relationship between the properties of these tools and how they are used to assist learners (Kirschner, 2002). Moreover, as McLoughlin and Lee (2007) note, instructors and researchers need to acknowledge that "technologies are intricately related to many other elements of the learning context" (p. 666), such as subject content, curriculum, communication, process, resources, scaffolding and learning tasks. In the case of the FL writing classroom, it is crucial that classroom practitioners understand how the use of social tools can support the effective delivery of learning. Therefore, as suggested by Hyland (2003), it is necessary first to develop a well-structured writing course based on genre-specific pedagogy. In this process the instructor models texts and helps learners to deconstruct and analyze features of language and structure. The judicious integration of Web-based tools can then make learners become active participants in the process whereby, through collaboration and multiple drafts, they acquire the necessary linguistic and writing conventions of the target language.

We would like to conclude this discussion with a word of caution. Regardless of how useful or valid the collaborative exercises may have been, there is no doubt that learners still feel more comfortable when writing individually for several reasons: they retain more control over their writing, they establish their own personal style, and they are not dependent on the input of others. At the logistical level working collaboratively outside the classroom can be problematic and cumbersome for some learners. For example, learners who are used to writing on their own have to negotiate times to meet, have to deal with technology-related problems on their own and depend on another person for their grade. These learner perceptions present an important challenge for instructors who adopt collaborative approaches to class assignments. For instructors, it is essential to (a) demonstrate to learners that integrating social tools goes beyond a classroom exercise (Levy & Kennedy, 2004; Ortega, 2009; Warschauer, 2004), (b) transform learners into critical users who understand how the application of technological tools can transform the learning environment (Blake, 2008), and (c) highlight the importance of seeing collaborative work as a

practice that can be relevant to learners' future professional lives (Brown & Adler, 2008). The collaboratively-created text should not be regarded as a combination of individual endeavors, but rather as the result of several contributions which together create one distinctive voice.

CONCLUSION

The adoption of educational technology can create a space beyond the more traditional classroom setting that can be used judiciously to facilitate learners' writing processes and interactions. The use of social Web technology in the present study was able to expand traditional classroom boundaries (Ortega, 2007; Van Deusen-Scholl, 2008; Van Deusen-Scholl, Frei, & Dixon, 2005), creating a learning community that was less teacher-dependent, and one that was not exclusively based on topics presented in the textbook or by the instructor, but that emerged from the interests and interactions of all class members (Levy & Kennedy, 2004). The use of these tools also allowed the researchers to observe how writers dealt with L2 writing challenges through a novel medium. Learners' engagement in virtual collaboration through meaningful interactions (i.e., having to make decisions and solve problems related to set tasks) becomes a perfect vehicle for language development (Blake, 2000; Ortega, 2009; Sotillo, 2000). Learners found ways to address the L2 system (e.g., choice of vocabulary or syntactic structures) and genre features outside the traditional classroom environment. Moreover, the dialogue helped writers to construct or reconstruct their content knowledge and to engage with the writing conventions and use the appropriate language register for the argumentative essay genre.

We do not propose that collaborative work should displace individual work but that both approaches can complement each other and expand the writers' linguistic experiences in a holistic manner. Given that FL instruction promotes communication as a prime methodology to acquire a second language, requiring learners to address L2 writing aspects interactively appears to be a "win-win" situation. From a pedagogical point of view, it is also important to consider which methodological approaches may best support language learners in diverse instructional contexts (e.g., distance learning, commuter schools, and on-campus courses) and which can minimize levels of stress or frustration when learners are being introduced to unfamiliar genres.

There are several limitations in this study that need to be addressed in future research. First, the low number of learner participants (although not unusual in advanced FL courses) means that our study cannot provide generalizable results. Second, this study focused exclusively on one task: the argumentative essay. Obviously, writing processes will need to vary according to the cognitive demands of other tasks (e.g., expository or narrative essays). Comparing how learners work collaboratively and individually on a variety of tasks is likely to provide more insights for L2 writing research and classroom practice. Third, the sequence in which learners completed the task may have affected the results of this study. Instead of having learners complete the first task collaboratively and the second one individually, it would be beneficial to have a second group complete the first argumentative essay individually and the second one collaboratively. This approach would diminish the group effect and provide a better perspective of learners' writing processes when approaching an argumentative essay at different writing stages. Fourth, other language proficiency levels should also be considered when conducting research into the application of social tools for FL writing. Fifth, collaborative writing using wikis and chats should be compared to that performed without the use of these technologies to provide more information about how use of social tools supports writing processes. Finally, there is a need for more research generally in the area of collaborative writing and its possible benefits for L2 development; such research needs to be based on theoretical models that illuminate social interaction, and should consider a diversity of writing tasks performed with the support of available social technologies.

NOTES

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APPENDIX A. English Translation of Written Essays**Draft 1**

The question of the job offer is one that appears many times in economic debates about immigration. In line with some economists, specifically George Borgas, a Cuban immigrant and Professor of Economics and Social Police, immigrant workers reduce the salaries of men born in the United States by 4% (Kerper). Additionally, for those men without a secondary school diploma, salaries decrease by 7.4% (Kerper). In contrast to this conclusion, according to Marks, immigrants do not harm the economy, but they help it.

Draft 2

The question of the job offer is one that appears many times in economic debates about immigration. Some economists note various negative consequences with a large increase in the offer of jobs as a result of an influx of immigrants. According to George Borgas, a Professor of Economics and Social Police, immigrant workers reduce the salaries of men born in the United States by 4%, and for those men without a secondary school diploma, salaries decrease by 7.4% (Kerper). Therefore, this effect is often temporary and at a local level. Additionally, compared with the numerous benefits of this increase in job offers, this limited competition is not so significant. Marks, a member of the research team on immigration, emphasizes some of these benefits to the economy.

(Translated as close to the Spanish version as possible)

APPENDIX B. English Translation of Collaborative Writing**Draft 1**

In Peru 70% of the crimes reported are committed by men who hit their [female] partners, while researchers in a 2005 study have concluded that, during that year, 52% of Nicaraguan citizens suffered some type of aggression by the trusted men with whom they lived and had a relationship.

Draft 2

Sexism causes pain in Latin America, both literally and metaphorically. Besides being a hindrance to the development of the woman in society, sexism is very much linked to domestic abuse.

(Translated as close to the Spanish version as possible)