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Collaborative Writing in L2 Contexts: Processes, Outcomes, and Future Directions

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Collaborative writing is the joint production of a text by two or more writers. Despite the widespread use of collaborative writing in the world outside the second language (L2) classroom, the use of collaborative writing tasks in L2 classes, to date, seems relatively limited. The overarching aim of this article is to suggest that collaborative writing activities, if carefully designed and monitored, may form an optimal site for L2 learning. The article begins by providing a brief theoretical rationale for collaborative writing, drawing on both cognitive and sociocultural theories. It then reviews the small number of published studies that have investigated collaborative writing in different L2 contexts. This review provides empirical evidence that working jointly on producing a written text provides opportunities for language learning, but that factors such as task type, L2 proficiency, and the relationships that the learners form affect these opportunities and may also affect language-learning gains. The chapter then considers new directions in implementing collaborative writing: online collaboration via wikis. The article concludes by highlighting the factors that need to be considered in order to maximize the language-learning potentials of collaborative writing in face-to-face and online modes.

Collaborative writing may be defined as the joint production or the coauthoring of a text by two or more writers. Note that the defining trait of collaborative writing is the joint ownership of the document produced. Thus collaborative writing is distinguished from the group-planning or peer-feedback activities that are often manifest as part of the process approach to writing instruction.

The use of collaborative writing tasks is quite common in university courses. For example, group assignments are increasingly assigned in university courses because they are believed to reflect the team writing often undertaken in the real world (Strauss, 2001). There have been a number of studies documenting the advantages (as well as the potential difficulties) of such team writing projects (e.g., Dias, Freedman, Medway, & Pare, 1999; Mirel & Spilka, 2002). In addition, leading composition scholars such as Kenneth Bruffee (1993) have written about

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the benefits of collaborative writing such as the fostering of reflective thinking and a greater awareness and understanding of audience.

Yet in second language (L2) classrooms, the use of collaborative writing tasks has been relatively rare. Although the 1980s and 1990s saw growth in the use of pair and small-group work in the language classroom, informed by interaction hypothesis of Long (1996) and communicative approaches to L2 instruction, most of these peer-interaction activities employed oral tasks (e.g., information gap tasks) rather than writing tasks. Numerous studies based on the interaction hypothesis (for a review, see Mackey & Gass, 2006) have shown that when learners work in small groups (and more commonly in pairs), they engage in negotiations of meaning with the goal of making their output comprehensible and more target-like. These negotiations are said to facilitate L2 learning. Ortega (2007) noted that although researchers informed by cognitive-interactionist theories of second language acquisition (SLA) have focused mainly on oral interaction, the same type of interaction may occur in other modalities, such as writing.

The use of writing tasks in pair work activities began more earnestly following the seminal work of Swain (1985, 1993, 1995) on the importance of output for L2 development. Swain (1993, 1995) argued that the need to produce output is more likely to encourage learners to process language more deeply, notice gaps in their interlanguage, and reflect on language use. Although Swain referred to both oral and written output, writing may in fact provide greater opportunities for testing hypotheses, receiving and noticing feedback, and focusing on accuracy. Weissberg (2000), in his longitudinal study, found that adult L2 learners were more likely to produce new syntactic forms in their writing than in their speaking tasks. Writing is less ephemeral than speaking and does not require online processing; hence, the provision and subsequent noticing of corrective feedback are more feasible with writing (Cumming, 1990; Harklau, 2002). Furthermore, writing is more likely to encourage learners to reflect on their language use, drawing on their explicit knowledge of the language (Adams & Ross-Feldman, 2008; Williams, 2008). Weissberg (2006) suggested that tasks that integrate speaking and writing, as is the case in collaborative writing tasks, may be more conducive to language learning than solitary writing. As Weissberg pointed out, collaborative writing provides learners with a multitude of roles not available during solitary writing: that of tutors, coauthors, sounding boards, and critical readers.

Swain's subsequent work (2000, 2006, 2010) expanded on the advantages of collaborative writing, specifically in her writing on collaborative dialogue and languaging. Collaborative dialogue (Swain, 2000) is defined as the talk that emerges when learners engage in a problem-solving activity. *Languaging* (Swain, 2006, 2010) is the process of using language in an attempt to make meaning; that is, it is a means through which thinking is articulated and thus brought into existence. When engaged in writing, learners *language* about language; that is, they deliberate about how to best express their intended meaning. Although languaging can occur with oneself, when one is composing individually, such languaging is usually subvocal (thinking), which is speech directed to oneself. The benefit of collaborative writing is that it encourages other-directed talk, that is, talk that is vocalized. Once thoughts are vocalized, they are transformed

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into artefacts. These artefacts, together with the written text, can be further explored, that is, languaged further.

Swain's work on collaborative dialogue is very much informed by Vygotsky's (1978) sociocultural theory. The underlying premise of sociocultural theory is that all learning is fundamentally a social process, the result of interaction among humans in the social milieu. Vygotsky's work focused on children's cognitive development, particularly the development of higher-order cognitive functions such as voluntary attention and intentional memory. Furthermore, the interaction was generally conceived as between an adult and a child. The adult (expert) provides carefully attuned assistance (scaffolding) to the child (novice). However, in the field of SLA, a number of researchers have subsequently shown that scaffolding can also be provided by peers in pair or group work, where the role of the expert is fluid (Ohta, 2001) or shared by learners pooling their expertise, a process referred to as collective scaffolding (Donato 1994; Storch, 2002, 2009). In this sense, jointly constructed performance can outstrip individual competence (Swain, 2000).

While collaborative writing seems well supported theoretically, the number of empirical studies that have investigated collaborative writing in L2 classes is relatively small. Three strands can be discerned in this body of research. The first strand comprises studies that have focused on the nature of the cognitive processes that collaborative writing engenders. These studies have also considered the impact of factors such as task type and L2 proficiency grouping on these processes. The second strand includes studies that have looked more closely at the outcome of collaborative writing, whether it be in terms of the text produced compared to texts produced by students writing individually or in terms of evidence of language learning attributable to collaboration. The third strand includes studies that consider collaborative writing as it unfolds in computer-mediated communication and, in particular, the use of wikis.

COLLABORATIVE WRITING: COGNITIVE PROCESSES

Since collaborative writing is said to encourage learners to language, that is, to reflect on language use in the process of producing language, a number of researchers have examined the nature of languaging that occurs during such activities, and the factors that may impact on it. The two factors that have received the most research attention are task type and L2 proficiency grouping. Languaging in these studies has been operationalized as language-related episodes (LREs). These episodes are segments in the learners' dialogues where they deliberate about language (grammatical form, lexical choices, mechanics) while trying to complete the task (Swain & Lapkin, 2001).

Building on earlier work by Storch (2001) and by Swain and Lapkin (2001), de la Colina and García Mayo (2007) compared attention to language generated by three types of tasks: jigsaw, text reconstruction, and dictogloss. Unlike the earlier studies, de la Colina and García Mayo's study was conducted in an EFL (English as a foreign language) setting (English language learners in a university in Spain) and with low-proficiency L2 learners. The study found that all

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three collaborative writing tasks were effective in drawing learners' attention to language, but that the more structured task (text reconstruction) elicited more LREs than the other two tasks. Although the data (LREs) showed that even these low-proficiency L2 learners were able to provide one another mutual scaffolding, the researchers noted that many of these LREs were resolved incorrectly, suggesting that such tasks may not be suitable for low-proficiency L2 learners.

Storch and Wigglesworth's (2007) study examined, among other issues, the attention to language generated by two types of meaning-focused writing tasks: a data commentary report (based on a graphic prompt) of about 150–200 words and an argumentative essay of about 250–300 words. The participants in this study were advanced ESL (English as a second language) learners. Given the longer text requirement of the essay, the participants were given more time to complete it, and hence it was perhaps not surprising that the essay elicited more LREs than the data commentary report. Being meaning-focused tasks, both elicited more attention to lexical choices (lexical LREs) than to accuracy (form-focused LREs). Storch and Wigglesworth suggested that this greater attention to lexis could also be attributable to the fact that the participants were fairly advanced L2 learners and hence had less need to deliberate about grammatical accuracy. Furthermore, unlike de la Colina and García Mayo's (2007) study, most of the LREs in this study were resolved correctly. However, the authors also noted variation between pairs not only in terms of attention to language (i.e., how many LREs were elicited) but also in terms of the nature of pair work. Although most pairs collaborated, one pair formed a dominant–passive relationship in which one participant contributed very little to the languaging activity (for patterns of dyadic interaction, see Storch, 2002, 2009).

Clearly, the L2 proficiency of learners may affect the quantity and quality of the LREs. One of the early studies to consider the impact of proficiency pairing on attention to language use was by Leeser (2004). In Leeser's study, 10 Spanish L2 learners were assigned to pairs of similar proficiency (two high-high and two low-low pairs) and mixed proficiency (one pair) and asked to complete a dictogloss task. The pair talk was analyzed for the number and type of LREs (whether lexical or form focused) and their resolution. The study found that L2 proficiency had an impact on the number of LREs produced: the high-high pairs produced the greatest number of LREs, followed in descending order by the high-low and low-low pairs. The focus of the LREs also seemed to be affected by L2 proficiency: the high-high pairs focused mainly on grammatical forms; the low-low pairs mainly on lexis. Although most LREs were resolved correctly across all proficiency pairings, the highest proportion of unresolved LREs was found in the data of the low-low pairs, again suggesting that languaging may not be as successful among low-proficiency pairs.

Building on Leeser's work, subsequent studies investigated the effect of not only the learners' L2 proficiency pairing but also the relationship that they formed when working in pairs of similar and mixed proficiency. In a novel research design, Watanabe and Swain (2007) compared the nature of attention to form of individual learners when interacting with both more and less proficient interlocutors. That is, the study investigated whether the occurrence of LREs differed when the same four English L2 learners interacted with

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lower- and with higher-level interlocutors. Although the study involved learners in a multistage task (writing and responding to feedback), of most relevance here is the learners' languaging in the writing stage. The researchers found that the learners produced more LREs when they interacted with a higher-level interlocutor. Drawing on the model of dyadic interaction developed by Storch (2002, 2009), the researchers analyzed the relationships formed by the dyads and found that learners who collaborated produced more LREs than other patterns of interaction, thus suggesting that it is the pattern of interaction that may be more important than the relative L2 proficiency of the interlocutors.

Kim and McDonough (2008), using a research design similar to that of Watanabe and Swain (2007), paired eight intermediate Korean L2 learners with fellow intermediate interlocutors and then with advanced interlocutors. The task used was a dictogloss. The results showed that when interacting with an advanced peer rather than with an intermediate peer, learners produced more LREs in total (grammatical and lexical) and a greater proportion of these LREs were lexical. Furthermore, a greater proportion of LREs were left unresolved or were resolved incorrectly when learners worked with fellow intermediate peers rather than with more advanced peers. In terms of patterns of interaction, the study found that learners who were collaborative with an intermediate interlocutor tended to be more passive with an advanced interlocutor, whereas learners who were dominant with an intermediate interlocutor were more collaborative with an advanced interlocutor. However, it is not clear whether these patterns of pair interaction affected the number of LREs produced.

The importance of the relationships pairs formed was also one of the key finding in Aldosari's (2008) doctoral research. Aldosari's study, conducted in EFL classes in Saudi Arabia, set out to investigate the effect of proficiency grouping, task type, and the relationships learners formed on the quantity and type of LREs that collaborative writing tasks elicited. Three tasks were used: jigsaw, composition, and an editing task. Eighteen students participated in the study, forming six pairs each of high-high, high-low, and low-low pairs (based on their EFL instructor's assessment). The study found that task type affected the type of LREs, with more meaning-focused tasks (jigsaw and composition) eliciting more attention to lexis; whereas the editing task generated more grammar LREs. However, in terms of the number of LREs, the main determinant was the relationships the pairs formed rather than their proficiency grouping or type of task. Learners who formed collaborative pairs generated more LREs than those who formed asymmetrical patterns of interaction (expert-novice or dominant-passive). Furthermore, collaboration tended to occur mainly among the similar proficiency pairs (low-low and high-high) rather than the mixed proficiency pairs, where the more proficient learner tended to dominate the interaction.

COLLABORATIVE WRITING: OUTCOMES

The data (LREs) of the studies reviewed showed that when collaborating on a writing task, the learners deliberated about language choices; articulated their uncertainties; provided suggestions, countersuggestions, and explanations;

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and gave and received feedback. Swain and Lapkin (2001) claimed that LREs represent language learning in progress. A number of researchers have set out to verify this claim by investigating the outcomes of collaborative writing activities.

Storch's (2005) classroom-based study compared the writing produced by two groups of fairly advanced ESL learners who were given the choice to work on a writing task (data commentary task) individually or in pairs. Eighteen students chose to work in pairs, and five elected to work individually. All the texts produced were analyzed using a range of quantitative and qualitative measures. Quantitative measures included measures of fluency (total number of words), accuracy (percentage of error-free clauses, errors per words) and complexity (e.g., proportion of dependent clauses to clauses). The texts were also assessed globally using a 5-scale scheme that took into consideration content, structure, and task fulfillment. The study found that pairs tended to produce shorter texts, but that the texts were more accurate and the language more syntactically complex. Furthermore, pairs tended to produce texts that had a better structure and clearer focus. However, given the relatively small-scale nature of the study, it is not surprising that the differences were not statistically significant.

In a larger-scale experimental study, Wigglesworth and Storch (2009) compared texts produced by 48 pairs with texts produced by 48 learners working individually. All the participants were advanced ESL learners. The texts produced were compared using only quantitative measures, similar to the measures used in the Storch (2005) study. The researchers found that there were no statistically significant differences between the texts produced by pairs and by individuals in terms of fluency and complexity. However, the texts produced by pairs were more accurate than the texts produced individually, a difference that was statistically significant. Based on an analysis of the pair talk, Wigglesworth and Storch attributed these findings to the focus on language use and to the availability of collective scaffolding and mutual feedback that collaborative writing activities provided the learners.

The preceding two studies have shown that collaboration tends to result in more accurate texts. However, perhaps a more pertinent question is: Do collaborative writing activities, and the LREs thereby generated, lead to language learning? The following studies attempted to address this question.

Kim (2008) compared the effectiveness of collaborative and individual tasks on the acquisition of L2 vocabulary by learners of Korean as a second language. The task used was a dictogloss, and language gains were measured by comparing scores on a pretest and two posttests. This study had 32 participants: 16 learners completed a dictogloss in pairs (8 pairs), and 16 completed the same task individually. In this study the learners who completed the dictogloss task individually engaged in think-aloud protocols. The study found that the number of LREs produced by the pairs and by the individuals was similar, but fewer LREs were resolved incorrectly or remained unresolved in the pair work, because of the opportunity to pool knowledge in the pair work condition. More importantly, pairs performed significantly better on the vocabulary posttests (immediate and delayed) than the learners who completed the tasks individually. However, it should be noted that the tests assessed the learners' knowledge of word

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meanings rather than their ability to use the vocabulary; and hence the gains only represent one aspect of vocabulary learning.

Watanabe and Swain's (2007) study, discussed earlier, used the participants' initial joint writing task as a pretest and their subsequently individually written task (after receiving reformulation feedback and processing it collaboratively) as the posttest to assess language gains resulting from collaborative activity. The posttest was scored by noting whether each participant got the reformulated items right or wrong. The findings suggested that collaborative activity led to language learning (retention of feedback) but that the patterns of pair interaction greatly influenced the posttest performance. When the learners formed a collaborative pattern of interaction, they were more likely to achieve higher posttest scores regardless of their partner's proficiency level.

Brooks and Swain (2009) examined not only whether learning occurred as a result of collaborative activity but also the most effective source of learning. In their study, two pairs of adult ESL learners participated in four sessions. In the first session, the pairs coauthored a text. In the second session, the noticing session, the learners compared their version of the text to a reformulated version. In the third session, the stimulated recall session, the participants reflected on their noticing session (using a video recording of the noticing session) and were also given an opportunity to ask the researcher further questions about the reformulations. The students were then asked to revise their jointly produced text individually. This revised version was used as a posttest, to assess the learning that took place as well as the source of the learning, given that the learners had three different sources of expertise: peers, the reformulation, and interactions with the researcher in the recall session. The researchers traced any changes made in the posttest to the source of the expertise. Perhaps the most interesting finding of this study was that the most effective source of expertise was the peers. A very high proportion of the solutions to language problems that the learners discussed and resolved during the coauthoring session were maintained in the posttest. In contrast, some of the language errors, which were reformulated, discussed with peers and with the researcher, reappeared in the final version. The researchers explained their results in terms of the learners' zone of proximal development (Vygotsky, 1978). That is, the reformulations and assistance provided by the researcher dealt with structures that were perhaps beyond the learners' developmental stage. Peers, on the other hand, provided one another with assistance that was more attuned to their needs and developmental stage.

Storch (2008) noted that earlier studies on collaborative writing tended to consider only the quantity of LREs rather than their quality, and she suggested that depth of engagement evident in the LREs may affect subsequent language development. In her study, 22 ESL advanced learners completed two similar versions of a text reconstruction task: The first version was completed in pairs and the next version individually. The data analysis of the transcribed pair talk showed that pairs attended to a range of grammatical and lexical items, but that the nature of their attention ranged from elaborate to simple. Guided by the work of Kuiken and Vedder (2002), elaborate attention was operationalized as instances where learners deliberated and discussed language items and

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simple attention where one learner made a suggestion and the other repeated, acknowledged, or did not respond to the suggestion. Analysis of learner performance on a set of items that were common to the two versions of the text reconstruction task suggested that although attention, whether elaborate or simple, tended to lead to learning or consolidation of the structures focused on, it was elaborate attention that was more beneficial to both members of the pair than simple attention. Elaborate attention, where learners deliberated over alternatives, and questioned and explained their suggestions, led to consolidation or learning more so than simple attention. Tocalli-Beller and Swain's (2005) study, on the processing of feedback (reformulations), also found that where students engaged with the reformulations, either disagreeing with or questioning the reformulations, this verbalization advanced their understanding of the suggested changes. However, it should be noted that depth of engagement does not necessarily involve learners articulating grammatical rules. Gutiérrez (2008) argued that lack of ability to articulate language knowledge does not necessarily reflect lack of knowledge. The claim made by Storch (2008) is that it is not language knowledge per se but the depth of attention and engagement that may be important in collaborative writing tasks and subsequently for L2 development.

To date, the number of studies on the outcomes of collaborative writing, particularly studies showing evidence of L2 learning, are few in number and small scale. More research is clearly needed to provide evidence to support the claim that collaborative writing tasks result in L2 learning and, if so, whether they are equally beneficial for all linguistic features.

COLLABORATIVE WRITING: ONLINE COLLABORATION

In the past 20 years, the field of computer-mediated interaction has greatly diversified in scope. Warschauer and Grimes (2007) described the various forms of interaction facilitated by the latest features of computer technology, often referred to as Web 2.0, including blogs, wikis, and social networks. These new developments provide opportunities for new types of interactions and collaborative activities.

Of particular relevance is the use of wikis, a new form of collaborative writing activities. Wiki refers to a special type of Web site that allows all users to contribute or edit within the site, and a record of all contributions is kept. One of the major advantages of the wiki is that whereas group collaboration on a document in the past could only be achieved by individual asynchronous editing, which then necessitated coordinating the edits, wikis allow all group members to have equal access to the most recent version of the document. Thus group members can build on one another's ideas. Unlike traditional face-to-face collaborative writing, wikis usually involve a group of writers rather than pairs, and the writing activity takes place over a long term.

There has been a growing awareness of the educational possibilities of wikis, and reports on their use have increased. In the field of general education, there have been reports describing the use of wikis with young learners (e.g., Wilkoff, 2007), university students (e.g., Elgort, Smith, & Toland, 2008) and

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teacher trainees (e.g., Arnold & Ducate, 2006; Matthew, Felvegi, & Callaway, 2009; Wheeler, Yeomans, & Wheeler, 2008). For example, Matthew et al.'s study was part of an ongoing large-scale project investigating the potential of a class wiki to enhance teacher trainees' learning of course content. The learners' reflective diary entries suggested that the wikis contributed to the students' learning by encouraging them to read one another's contributions and synthesize the various sources of information. However, both the Wheeler et al. and the Elgort et al. studies suggested that wiki collaborative activity may evoke new notions of authorship. Wheeler et al.'s study found that although students were happy to post their contributions to a wiki space for other group members to read, they were resistant to having their contributions altered or deleted by other group members. Elgort et al. reported that wikis seemed to encourage posting contributions and some limited synthesis of information but very little evaluation.

To date, there seems to be little published research on the use of wikis in L2 learning contexts. Most of the available research is quite descriptive, reporting on teachers' and learners' experiences of wikis implemented in L2 writing classrooms. For example, Mak and Coniam (2008) described how Year 7 (age 11) ESL students in an English-medium secondary school in Hong Kong produced a text using wikis over a 6-week period. In an in-depth case study of one group of four students, the researchers show that initially students' contributions were merely additions (not necessarily cohesive) to other students' contributions. However, as the project progressed and the students became more accustomed to the wiki environment, they began to edit one another's work as well as add to the content that had been written. Mak and Coniam noted that the amount of each student's contributions varied a great deal over time for individual students and among students. Furthermore, most of the contributions made by the students were in terms of adding to the content, with very few instances of error corrections (own or peers'). Mak and Coniam attributed this lack of attention to accuracy to the fact that Hong Kong students tend to spend little time on proofreading and correcting their work and are averse to amending their peers' work, as they do not wish their peers to lose face.

However, Kessler's (2009) larger study, conducted with 40 EFL adult learners in Mexico, also reported on students' lack of attention to language use when involved in a wiki project. Kessler's study, which moved beyond a description of how wikis were implemented, investigated ESL learners' attention to accuracy in a long-term (16-week) wiki project. As in the case of Mak and Coniam's (2008) study, here too, analysis of the learners' revisions for LREs showed that most of the revisions made were to content and style (font size, color, etc.) rather than to form. When corrections to form were made, they tended to focus on word choice and spelling rather than grammatical accuracy. An interesting observation was that students often spent a great deal of time altering the style of sentences yet ignored the errors in the sentences. In fact, there were slightly more errors that were overlooked than errors that were attended to. Despite instructions about the need to produce a grammatically accurate wiki text, the students seemed to often ignore grammatical errors that they later (when shown in subsequent interviews) demonstrated an ability to correct. Interviews with

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the students suggested that one reason for these findings is that the students clearly perceived this collaborative writing activity as meaning rather than language focused; another reason is that they felt that the errors did not impede comprehension of the content.

The findings of these studies thus suggest that the mode of communication may affect attention to language in collaborative writing tasks. A study by Tan, Wigglesworth, and Storch (2010), which compared face-to-face and computer-mediated collaborative writing by the same pairs of Chinese L2 learners in an Australian university, found that whereas students tended to engage with one another's contributions when composing texts in the face-to-face mode, in the computer-mediated mode the style of interaction was cooperative. That is, in the computer-mediated mode the learners contributed equally to the task completion, taking turns to propose a sentence. However, they often did not engage with one another's contribution by building on it or providing feedback. Thus wikis or other forms of computer-mediated collaborative writing tasks may not be optimal for a focus on grammatical accuracy.

Kessler and Bikowski (2010), in a reanalysis of Kessler's (2009) data, considered the nature of the participants' contributions to content revisions (rather than language revisions). The authors reported that the participants added, deleted, and elaborated on one another's contributions. However, the authors also found that willingness to contribute to the wiki text and the nature of the contribution changed over time. In the first 2 weeks of the project, very few students participated, and the pattern of contribution was deletion and replacement of entire extant texts. In subsequent weeks, more students began to contribute, and the pattern of contribution changed. The deletions were minor amendments rather than whole text deletions, and there were also many instances of elaborations on one another's contributions. These findings confirm those of Mak and Coniam's (2008) study and suggest that willingness to contribute to and collaborate in a coauthoring activity may take time to develop. However, these findings also suggest that perhaps in large-group projects (40 participants), a sense of text ownership may be elusive.

CONCLUSION

Collaborative writing tasks may be conducive to language learning because they provide learners with opportunities not only for language practice but also to language. That is, collaborative writing avails learners with opportunities to deliberate about their own and their peers' language use as they attempt to create meaning. Although learners engage in languaging when writing individually (see Kim, 2008), perhaps one of the greatest advantages of collaborative writing is that it affords learners opportunities to pool their linguistic resources when encountering problems. Languaging about language is one of the ways to gain new knowledge about a language or consolidate existing L2 knowledge. This collaboration leads to the production of more accurate texts and may lead to language learning gains.

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However, the studies reviewed show that in implementing collaborative writing tasks, the nature of the task, the L2 proficiency of the learners, and the mode of communication (whether face-to-face or via computer-mediated interaction) need to be taken into consideration. Some collaborative writing tasks (e.g., text reconstruction) may not be suitable for low-proficiency L2 learners. L2 proficiency is a factor not only in selecting the most appropriate collaborative writing task but also in assigning students to form pairs. This is particularly pertinent in classes with learners of varying L2 proficiencies. The research suggests that collaborative tasks may not be suitable for low-proficiency L2 learners, unless they are paired with higher-proficiency learners (Leeser, 2004), and the nature of the relationship formed by pairs of unequal proficiency needs to be monitored (Aldosari, 2008).

Wiki collaborative writing may encourage participation, but it may not encourage attention to language use. Thus, although wiki-produced texts may be highly collaborative writing activities, unlike face-to-face collaboration, they may not encourage learners to language and the texts produced may not be as accurate as those produced in face-to-face collaborative writing. As with any new technology or approach, the use of wikis engenders issues and challenges for teachers. There is still a lack of clarity of the nature of wiki collaboration and a lack of knowledge on how to best structure such collaborative activities, including the optimal group size.

Research on collaborative face-to-face tasks suggests that the relationship learners form when completing collaborative tasks is important, as research has shown that not all pair work is necessarily collaborative, and it is collaboration that creates the conditions conducive to language learning rather than pair work per se (Aldosari, 2008; Storch, 2002, 2009). The longitudinal nature of wiki projects may be an advantage: It may allow learners to develop the trust and group cohesion that seems necessary for successful collaboration.

Reported teacher observations and surveys suggest a persistent reluctance on the part of learners to engage in coauthoring (e.g., Peretz, 2005) and of teachers to implement such activities, particularly in EFL settings (McDonough, 2004). Students' reluctance to engage in collaborative writing may be related to past experiences of group work. Watanabe's (2008) study shows that students' attitudes toward collaborative activity are very much influenced by their actual experience of collaboration. Watanabe found that learners reported positive attitudes to collaborative activity if they engaged in collaborative pair work. Conversely, those who experienced noncollaborative pair work were negatively disposed to collaborative activity. Thus there is clearly a need to monitor students' collaborative writing activity and perhaps even to train them before implementing collaborative writing tasks.

Learners' reluctance to engage in collaborative writing activities may abate with the advent of collaborative computer-mediated tasks. Research on web-based collaborative writing (wikis) (e.g., Kessler, 2009) seems to suggest that learners embrace collaboration much more readily perhaps because wikis are so intrinsically collaborative. This bodes well for the future of collaborative writing tasks in L2 classrooms.

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