

USING WIKIS TO PROMOTE COLLABORATIVE EFL WRITING

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This study focuses on the use of wikis in collaborative writing projects in foreign language learning classrooms. A total of 34 intermediate level university students learning English as a foreign language (EFL) were asked to accomplish three different wiki-based collaborative writing tasks, (argumentative, informative and decision-making) working in groups of four. Student wiki pages were then analyzed to investigate the role of task type in the number of self and peer-corrections as well as form-related and meaning-related changes. In addition, focus-group interviews and questionnaires were conducted to find out how students would describe their overall experience with the integration of a wiki-based collaborative writing project in their foreign language learning process. The results revealed that the argumentative task promoted more peer-corrections than the informative and decision-making tasks. In addition, the informative task yielded more self-corrections than the argumentative and decision-making tasks. Furthermore, the use of wiki-based collaborative writing tasks led to the accurate use of grammatical structures 94% of the time. The results of the study also suggest that students paid more attention to meaning rather than form regardless of the task type. Finally, students had positive experiences using wikis in foreign language writing, and they believed that their writing performance had improved.

Keywords: Online Teaching & Learning, Virtual Environments, Writing, Collaborative Learning, CALL, Learners' Attitudes, Second Language Acquisition

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INTRODUCTION

Writing instruction in foreign language classes is especially important since good writing requires the acquisition of a range of linguistic abilities, including grammatical accuracy, lexical knowledge, syntactic expression and a range of planning strategies such as organization, style and rhetoric. Writing instructors are not only responsible for emphasizing accuracy in formal language but they should also attend to the establishment of meaning by providing their learners with meaningful contexts and authentic purposes for writing. Although writing is an individual act, it is also a social and interactional process during which the writer tries to express a purpose through responding to other people and texts. As Hyland (2003) argues, including formal elements into writing instructions to achieve grammatical accuracy and ensuring that students use those structures appropriately for specific purposes in a variety of writing contexts can be a demanding task for second language writing teachers. Research shows that collaborative writing, both in the first language (L1) and second language (L2) during which time learners jointly produce a text, creates a sense of community among student writers and requires reflective thinking. The exchange of feedback among students during a joint project allows them to notice linguistic and organizational problems in their writing and would lead to error correction and grammatical accuracy (Donato, 1988; Storch, 2002, 2005; Swain and Lapkin, 1998).

In the past few decades, the integration of technology in writing instructions, especially the development

of computer-supported social tools such as wikis and blogs, offer new ways of teaching by allowing authoring, information sharing, knowledge building and easier collaboration opportunities among learners. Previous studies that investigated the revision behaviors of learners during collaborative wiki projects reveal that students pay attention to both form and meaning in their writing when writing contexts based on carefully-designed collaborative writing assignments are employed (Kost, 2011; Lee, 2010).

The present study was conducted to contribute to the existing literature as regards of using wikis for collaborative writing purposes by systematically examining the role of three different meaning-focused tasks. These encourage the negotiation of meaning by providing learners with an aim to convey a message to an audience, and on the interaction of learners and their revision behaviors in small groups from the perspective of form- versus meaning- focused changes and self- versus peer-corrections while jointly constructing texts. The research questions include:

1. In a wiki-based collaborative writing project, what is the role of task type in the number of form-related changes and meaning-related changes?
2. What is the role of task type in the number of self-corrections and peer-corrections?
3. To what extent will the participants be accurate in making these self- and peer-corrections?
4. What are students' perceptions of using wikis in collaborative projects?

Literature Review

Collaboration

There has been increasing attention in recent years towards a social cognitive perspective, which posits that meaningful social interaction is fundamental for language learning since learning a language is considered the outcome of a process of co-constructing one's L2 knowledge with peers rather than as a result of an individual's construction of knowledge (Benson, 2003; Donato, 2000; Hauck & Youngs, 2008; Lee, 2002; Swain & Lapkin, 1998; van Lier, 1996). These ideas are grounded in Vygotsky's (1978) sociocultural theories of learning of and specifically his notion of the Zone of Proximal Development. This theory describes learning as a social process, and emphasizes the fundamental role of social interaction among learners in which a more knowledgeable peer provides scaffolding to the less knowledgeable peer while completing a shared task. In L2 classrooms, collaborative tasks are expected to engage learners and to provide scaffolding on each others' use of language (Storch, 2002; Swain & Lapkin, 1998). It is through this collaborative scaffolding that learners improve their linguistic and cognitive capacities. According to Swain (2000), when interlocutors are engaged in a collaborative activity, the language they use (whether spoken or written) mediates a process of joint constructive interaction. She calls this collaborative dialogue—a dialogue that constructs linguistic knowledge in which what learners contribute becomes an object for reflection, receives peer feedback, addresses linguistic problems and encourages modified output. However, writing is more than simply linguistic accuracy. Swain (2000) also argues that tasks that engage students in collaborative dialogue “might be particularly useful for learning strategic processes as well as grammatical aspects of language” (p.12).

From this perspective, collaborative interaction helps L2 learners in writing, especially when they are asked to construct texts jointly and do peer-editing (Storch, 1999; Swain & Lapkin, 1998) by providing opportunities for learners to focus on various aspects of writing such as grammatical accuracy, lexis and discourse (Donato, 1994; Kim, 2008; Hirvela, 1999; Storch, 2002, 2009; Swain & Lapkin, 1998; Wigglesworth & Storch, 2009). While working on a single text by taking group responsibility, learners generate ideas, and pay attention to their language use and the organization of their ideas. Furthermore, they become engaged in collaborative scaffolding by giving and receiving feedback, which promotes the consideration of alternative uses of language and elaboration of ideas. Therefore, collaborative writing is

a powerful method of writing that encourages cooperation, critical thinking, peer learning and active participation towards an end product (Hernandez, Hoeksema, Kelm, Jefferies, Lawrence, Lee & Miller, 2008).

Role of Tasks in Language Learning

Nunan (1992) defines task as a “piece of classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language while their attention is principally focused on meaning rather than on form” (p.10). It is widely accepted that the nature of both oral and written interaction is affected by the type of task (Cohen, 1994; Skehan, 1996). Pica, Kanagy, and Falodun (1993) present a typology for communicative tasks according to interactional activities and communication goals. According to their taxonomy, tasks which promote the greatest opportunities for learners to experience the comprehension of input, feedback on production, and interlanguage modification are those tasks which require each interactant to hold a different portion of the information to reach the task outcome, Both interactants request and supply this information through the same or convergent goal, and only one acceptable outcome. Other research shows that open-ended tasks in which learners co-construct a piece of discourse, such as essays or reports, tend to encourage an increased amount of lexical and morphosyntactic negotiations (Pellettieri, 2000; Storch, 2005; Storch & Wigglesworth, 2007). In particular, tasks that require learners to use vocabulary, ideas and concepts that are beyond their immediate knowledge are found to increase opportunities for interaction (Blake, 2000; Foster, 1998; Pellettieri, 2000; Peterson, 2008; Pica, Kanagy, & Falodun, 1993). A review of task-based research by Ellis (2003) reveals that those tasks which are non-familiar, require information exchange, and have two-way information gap, closed outcome, human/ethical topic, no contextual support, and narrative discourse type promote the most meaning negotiation among learners. According to Skehan’s (1998) and Skehan and Foster’s (2001) limited attentional capacity model, learners need to prioritize whether to give their attention to meaning or form. If a task demands too much attention to its content due to its complexity, the learners’ attention will be allocated to its meaning; they will pay less attention to the language since humans have a limited capacity to process information. In other words, “tasks which are cognitively demanding in their content are likely to draw attentional resources away from language forms, encouraging learners to avoid more attention-demanding structures in favour of simpler language” (Skehan & Foster, 2001, p.189). In conclusion, the nature and type of task is expected to have an influence on the writers’ focus on form versus content, and the amount and type of interaction among writers during collaborative writing. This present study aims to further investigate this influence.

Research on Wikis

The development of new technologies offers new ways for language teachers to promote and enhance collaboration in foreign language education. With the advent of Web 2.0 tools, more potential for collaborative writing in the L2 classroom has emerged. Wiki is a web-based collaboration tool which can be easily created, viewed and modified using any web browser. The asynchronous online collaboration function offers language teachers new opportunities to combine all the essential parts of writing instruction such as grammatical accuracy, appropriate use of grammatical forms in different contexts, audience awareness, and multiple drafting and revising (Lund, 2008).

Wikis were found to provide a rewarding experience for students (Arnold, Ducate, & Kost, 2009; Ducate, Anderson & Moreno, 2011; Kost, 2011; Lee, 2010; Lund, 2008; Mak & Coniam, 2008), supporting learner autonomy (Kessler, 2009; Kessler, Bikowski & Boggs, 2012; Lee, 2010), resulting with an aggregated output (Kost, 2011; Mak & Coniam, 2008) and providing more focus on structure and organization (Elola & Oskoz, 2010; Mak & Coniam, 2008). Yet, in some studies, the issues of text ownership and a reluctance to edit the contributions of peers were raised. The interview responses in Lund’s study (2008) revealed students’ concerns about inexperienced editing and abuse, while in Kessler’s (2009) study, students were more willing to edit their peers’ work than their own. However, those peer

edits were found to be focused more on form rather than content as students felt they did not have the right to change the content of the contributions of others. Unequal contribution by group members to the collective product was another concern raised in Arnold, Ducate and Kost's 2009 study.

Several studies that have been conducted specifically investigated the types of revisions students made. In most of those studies, topic choice and task type were found to affect the degree to which students engage in collaborative writing as well as the degree of focus on form and the amount of writing production. Arnold et al. (2009) examined the revision behaviors of intermediate German students in three different classes using wikis collaboratively. One of the classes was "structured" and received instructions on how to edit their contributions, and revisions focused more on form than meaning. In contrast, in the "unstructured" class, revisions focused more on meaning than form. In all three classes, stylistic changes came third after form- and meaning-related changes. Kessler's (2009) analysis of revision behaviors of 40 non-native English speaking pre-service teachers in a Mexican university as they collaboratively-defined and revised the word "culture" using a wiki showed that they were willing to collaborate in this autonomous environment, and that they were more willing to edit their peers' work than their own. The task was initiated by the teacher but was completely left to the students to develop: no feedback, revisions or elaborations were provided by the teacher. Students focused more on meaning during the production, worked on improving content and did not strive for perfect grammatical accuracy as long as errors did not impede meaning. These findings are in line with Kessler et al.'s (2012) study, which investigated the collaborative writing behaviors during the production of research reports of their own choice by 30 highly-proficient non-native English speakers using Google Docs. Students focused more on meaning than form and the grammatical edits they made were more accurate than inaccurate. However, contrary to these findings, Kost (2011), who analyzed the number of formal changes versus meaning-preserving (stylistic) changes made by students in a German language class, found that formal changes were much more frequent than meaning-preserving (stylistic) changes (89% vs. 11%) and that students were very successful in repairing grammatical errors. Similarly, Spanish language learners in Lee's (2010) study attended to language errors at the sentence or word level during meaning-driven activities as they worked together. The open-ended tasks and topics that were broad enough and gave freedom to students to incorporate their personal interests while at the same time requiring them to focus on form, motivated the learners and resulted in a high degree of collaborative exchange in her study.

Although several studies have sought to address the effects of using tasks in writing instructions, few studies have examined the role of tasks on self-corrections and peer-corrections. The current study contributes to the literature by examining whether task type has an effect on the number of form-related and meaning-related changes, number of self- and peer-corrections, and by investigating the accuracy of self- and peer-corrections learners make during wiki-based collaborative writing tasks in an EFL context. It further seeks to understand learners' perceptions towards the use of wikis.

METHODOLOGY

Participants

Data for this study was collected from 16 female and 18 male non-native speakers of English from various educational backgrounds studying in a preparatory program at a private university in Istanbul. Participants had an average age of 19.2 years, and were studying in two different classes, each class consisted of 17 students. Two instructors taught each class. While one of the instructors was one of the researchers in both classes, the second instructor varied. All participants in this study shared the same native language, Turkish. They had already completed levels A1, A2 and B1 of the Common European Framework (CEF) before starting the B2-level module, and had 24 hours of English instruction each week. As such, they were considered independent users of the target language. In an interview prior to the study, all participants considered themselves to be competent users of Web 1.0 technology, including browsing the Internet and using email and text chat. However, none of the students had used a wiki before

the study.

Tasks

Learners participated in three different meaning-focused tasks (Table 1) that were selected to engage them in the collaboration and negotiation of both meaning and form as they produced texts in a wiki-based environment. Meaning-focused tasks can be defined as tasks in which students have an aim to convey a message to an audience thereby encouraging them to focus on the content of the text they produce. However, a form-focused task, such as drills or gap filling exercises, could be described as a task which encourages the learners to focus on the formal elements of the language. In line with the suggestions given in the literature, learners were immersed in open-ended and authentic tasks which were based on real life situations, including a communicative aim that intended to engage them in meaningful interaction and collective production through shared decision making, while at the same time allowing them to pay attention to form (Lee, 2010; Skehan, 1998; Swain, 2000).

Table 1. *Distribution of the number of MRCs in All Three Tasks*

Type of MRC	Argumentative Task	Informative Task	Decision-making Task	Total
Clarification / Elaboration of Information	89	36	46	171
New Information	33	51	14	98
Picture	22	48	9	79
Deleted Information	22	7	12	41
Synthesis of Information	9	1	7	17
Reorganizing	2	1	2	5
Video	0	3	0	3
Link	1	0	0	1

While all tasks required the use of higher-order thinking skills in line with Skehan's (1998) suggestions, task topics were selected from among familiar and meaningful topics for students to balance their cognitive load. The learners in the current study had just completed the B1 level of the CEF and were competent in writing "simple connected text on topics which are familiar or of personal interest" and writing "personal letters describing experiences and impressions" (Teachers' Guide to the Common European Framework, n.d., p.8). Considering Hess' (2011) Cognitive Rigor Matrix for reading and writing, the argumentative and decision-making tasks were selected to be cognitively and linguistically more demanding than the informative task, since the first two required the learners to apply skills such as devising an approach among many alternatives, developing a logical argument, and articulating a new voice. The informative task, on the other hand, mainly required such skills as recalling or locating basic facts, details, definitions and events, and describing the features of a place. All tasks were designed to be convergent in terms of goal orientation and required the learners to try to reach a common goal out of multiple outcome options. See Appendix A for a description of the tasks used in this study. Participants were continuously encouraged to use their own words, and were reminded beforehand that their text production would be monitored by the instructor against any form of plagiarism, especially because Tasks 1 and 2 seemed conducive to copying and pasting from various resources. The non-error-free nature of the texts co-constructed by participants in the wiki pages led researchers to assume that plagiarism had not been a concern for the results of the study.

Data Collection and Analysis

Procedure

The study took place during the second semester, which started in February 2010 and continued for seven weeks. At the beginning of this nine-week semester, the instructor/researcher set up a class wiki for each class and held a training session before learners started to work on their projects. Learners were provided with detailed criteria regarding the grading of their wikis, which included an assessment of both individual and collaborative working skills. The grade learners received from the project constituted 5% of their final course grade. Initially, learners worked on a non-graded task in which they collaboratively wrote definitions for specific concepts determined together in a class discussion whose aim was to assist the students in their familiarity with using the wiki. After the non-graded task, they were asked to complete three different tasks in a row. The first and second tasks took two weeks to complete, while the final task took one due to time restrictions of the nine-week academic semester.

Prior to each task, learners were randomly assigned to groups of four prior to each task and therefore they worked in a different group for each task. This was done purposefully since in Arnold et al.'s (2009) study, some students complained about unequal participation and poor communication within their groups. The researchers wanted the learners in this study to have a different group dynamic for each task and have a chance to be able to interact with different peers in their class. After the completion of the tasks, the content created by the learners in all the wiki pages was analyzed. A questionnaire was given to the students and a focus group interview was conducted in the seventh week of the study.

In order to examine the role of task type in the number of meaning-related and form-related changes, the history pages of all tasks were analyzed and the number of meaning-related and form-related changes was calculated separately for each task by the researchers. For the argumentative task, there were 31.75 history pages on average. The average number of history pages for the second task was 17.5. The final task generated 13 history pages on average. In the present study, to identify form-related changes, all sentences including grammatical corrections were analyzed by using Kessler's (2009) categorization as a starting point. However, only the incidents observed in the data became part of the categorization, and an analysis was based on the categories that emerged from the data as shown in [Appendix B](#).

To identify meaning-related changes, all sentences including at least one meaning-related change (MRC) were examined. Kessler and Bikowski (2010) define MRC as any meaning-related change a student makes such as changing a letter, word, sentence, paragraph or the entire wiki (p.45). Kessler and Bikowski's (2010) coding category was adapted to examine meaning-related changes in the data. However, the change of a letter, for example, the change of a misspelled word such as 'improvement' to 'improvement', was coded as a form-related change unless it led to a change in the meaning of a sentence. The last three categories in [Appendix C](#) were added by the researchers as they emerged in the data and includes a description of each category. In order to examine the role of task type in the number of self- and peer-corrections, all history pages of all tasks were analyzed and the number of self-corrections and peer-corrections was calculated separately for each task by one of the researchers and one native English speaking teacher (NES) who was also teaching with one of the researchers at the same institute. Both self- and peer-corrections were defined as any changes in the form of a grammatical structure and did not include any meaning-related changes. Peer-corrections were defined as the corrections made to one participant's contribution by another member of the group that he/she worked with, while self-corrections referred to the corrections made to one's own contributions to the wiki pages. The number of self- and peer-corrections was compared to explore which task yielded more self-correction or peer-correction. Corrections by the students were judged as "correct" or "incorrect" by the researchers and the aforementioned NES teacher. The number of correct and incorrect changes was calculated along with their percentages. All correct and incorrect edits were noted and counted separately for each task.

The Questionnaire.

In the seventh week of the study, students were asked to fill out a questionnaire that included questions about their overall learning, motivation, group interaction and use of technology (see [Appendix D](#)). The aim of the questionnaire was to describe the learners' overall experience with the use of wikis and to evaluate the effectiveness of the project. There were a total of 39 statements in the questionnaire: 35 Likert-type statements and four open-ended questions. All of the statements were adapted from Lee (2010) and Hazari, North, and Moreland (2009). The response rate was 67.64% for the questionnaire and its reliability was calculated as $\alpha=.98$. Descriptive statistics were used to analyze the results of the questionnaire. Open-ended questions were carefully read and recurring themes were grouped by the researchers.

The interview.

A face-to-face semi-structured focus-group interview was conducted with six randomly chosen participants in the seventh week of the study regarding their experiences in using wikis for collaborative writing tasks (see [Appendix E](#)). The interview was conducted at the institution of one of the researchers and was tape-recorded and transcribed. Common threads in the responses were identified and the results were used to triangulate the data obtained through the content analysis of the wiki entries and questionnaire results. The interview enabled the researchers to gain insight into the participants' overall experience regarding this wiki project.

RESULTS

In this section, the results of the analysis of the wiki pages will be presented to answer the first three research questions, and the questionnaire and interview responses will be discussed in relation to the fourth research question in the study.

The Effects of Task Type on Form-related vs. Meaning-related Changes

The content analysis of the wiki pages revealed that there were more meaning-related changes than form-related changes across all three tasks ([Figure 1](#)). In the argumentative task, 57% of all changes were meaning-related whereas 43% were form-related. In the informative task, the meaning-related changes constituted 77% of all changes while 23% were form-related; and in the decision-making task, 54% of the changes were meaning-related and 46% were form-related. A Chi-square test indicated that those relationships were statistically significant ($X^2=26.371, p<0.05$).

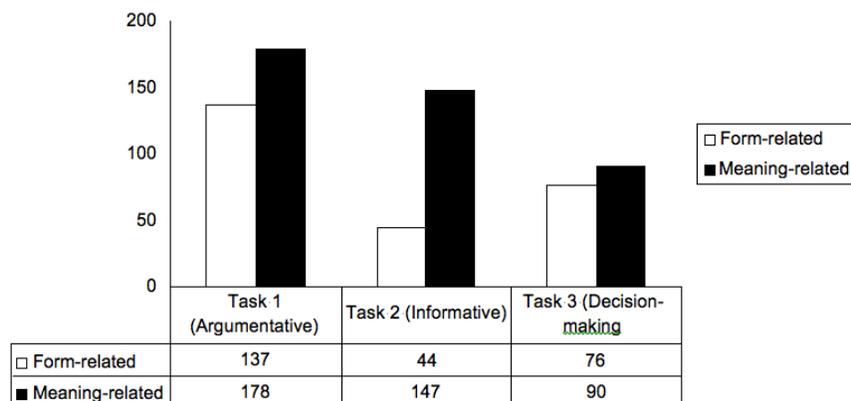


Figure 1. Distribution of changes in all three tasks.

The distribution of the number of meaning-related and form-related changes in all three tasks was analyzed using descriptive statistics as summarized in [Tables 1](#) and [2](#).

Table 2. *Distribution of the number of FRCs in All Three Tasks*

Type of FRC	Argumentative Task	Informative Task	Decision-making Task	Total
Word Choice	29	5	22	56
Spelling	23	9	13	45
Coordination	13	2	8	23
Singular/Plural	12	4	3	19
Articles	9	6	1	16
Tense	5	3	8	16
Capitalization	12	1	0	13
Verb Form	8	1	3	12
Part of Speech	6	2	1	9
Subject/Verb Agreement	3	2	4	9
Prepositions	2	4	2	8
Unnecessary Word	4	0	4	8
Word Order	4	1	3	8
Punctuation	3	0	0	
Verb-Verb Agreement	2	0	1	
Relative Clauses	0	2	1	
Active/Passive	2	0	0	
Modals	0	1	1	
Superlatives	0	1	0	
Double negation	0	0	1	

The most common meaning-related change was the clarification/elaboration of information followed by adding new information and adding a picture to the text. Word choice was found to be the most common form-related change followed by spelling. The results revealed that students attended to meaning more than form across all three tasks.

The Role of Task Type on Self- vs. Peer-Corrections

The content analysis of the wiki pages revealed more peer-corrections (a total of 203) than self-corrections (a total of 54) in total as illustrated in [Figure 2](#); the argumentative task resulting in the largest number of corrections, followed by the decision-making and informative tasks. It was only in the informative task that self-corrections outnumbered peer-corrections. In the argumentative task, 89% of all the corrections were made by peers while 11% were self-corrections. In the informative task, 32% of all the corrections were peer-corrections whereas 68% were self-corrections. Finally, in the decision-making task, peer-corrections constituted 88% of the total number of corrections with the remaining 12% being self-corrections. The results of the Chi-square analysis in SPSS revealed that those differences are statistically significant ($X^2=71.197$, $p<0.05$).

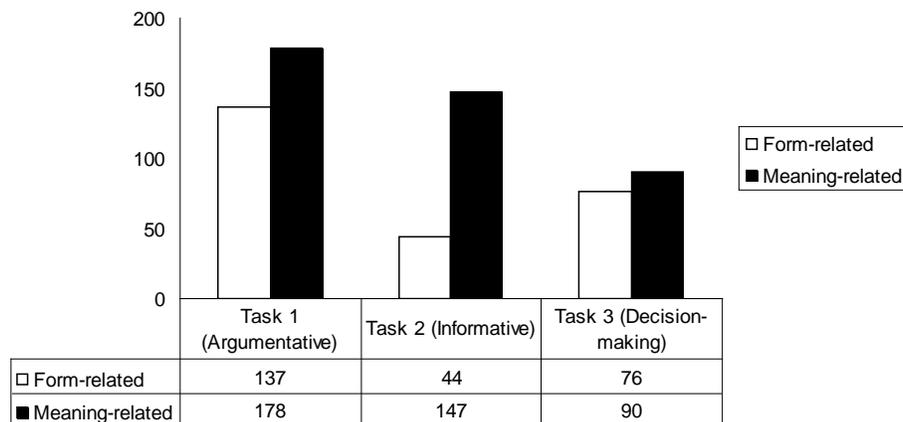


Figure 2. Distribution of corrections in all three tasks.

The Extent of Accuracy of Self- and Peer-corrections

A total of 203 peer-corrections in all three tasks were observed, and while 94.5% of them were correct, 5.5% were incorrect. [Table 3](#) illustrates the distribution of these corrections across all three tasks.

Table 3. Number of Correct and Incorrect Corrections in Peer-correction in Each Task

	Peer Corrections	Correct	Incorrect
Task 1 (Argumentative)	122	116 (95%)	6 (5%)
Task 2 (Informative)	14	10 (71%)	4 (29%)
Task 3 (Decision-making)	67	66 (98.5%)	1 (1.5%)
Total	203	192 (94.5%)	11 (5.5%)

A total of 54 self-corrections in all three tasks were observed, 92.5% of which were correct and 7.5% were incorrect. [Table 4](#) illustrates the distribution of these corrections across all three tasks.

Table 4. Number of Correct and Incorrect Corrections in Self-correction in Each Task

	Self-Corrections	Correct	Incorrect
Task 1 (Argumentative)	15	13 (86%)	2 (14%)
Task 2 (Informative)	30	29 (96%)	1 (4%)
Task 3 (Decision-making)	9	8 (89%)	1 (11%)
Total	54	50 (92.5%)	4 (7.5%)

When the total number of corrections was examined, out of 242 corrections made by participants in the wiki pages, 94% were accurate. As [Table 5](#) illustrates, the number of accurate corrections was higher than the number of inaccurate corrections in all three tasks. The highest level of accuracy was found in the decision-making task, as 97% of the corrections resulted in grammatical accuracy.

Table 5. *Level of Accuracy in the Corrections*

	Correct	Percentage	Incorrect	Percentage
Task 1 (Argumentative)	129	94%	8	6%
Task 2 (Informative)	39	89%	5	11%
Task 3 (Decision-making)	74	97%	2	3%
Total	242	94%	15	6%

Students' Perceptions Regarding Using Wikis in Collaborative Projects

Appendix D illustrates the averages of all the items in the questionnaire. As can be seen, the statements with the highest mean average were “*Use of wiki-based collaborative writing tasks helped to improve my foreign language writing skills*” (M=3.9), “*I liked the topics used in the tasks*” (M=3.9), and “*I started to view other English language learning methods more positively after using the wiki.*” (M=3.9) while the statements with the lowest mean average were “*Use of the wiki enhanced my interest in the course*” (M=3) and “*Doing the assignments through the wiki encouraged me to study more regularly*” (M=3).

All six students who participated in the interview stated that they had a positive experience using wikis for collaborative writing tasks. This finding was also supported by the questionnaire results; 52.2% of the respondents stated that they agreed or strongly agreed with the statement “*Overall, I had a positive experience with the use of wiki-based collaborative writing tasks*” (M=3.5). However, the questionnaire results showed that nearly 48% of the participants did not particularly enjoy these tasks. During the focus group interviews, those who did not enjoy the tasks explained that their discontent was mainly due to the compulsory nature of the project. They argued that they were not motivated because this project was a course requirement. Nevertheless, all interviewees concurred that the wiki provided a conducive environment for group work and was therefore useful. Moreover, 60.9% of the respondents agreed or strongly agreed with the statement “*I liked working together with my friends while creating wiki pages*” (M=3.7). Furthermore, students felt that their writing skills improved as stated by one interviewee:

When you read your peers' edits, you see different sentences used to express different ideas. This contributes to your existing knowledge of vocabulary.

The feeling of improvement in the students' foreign language writing skills is also reflected in the questionnaire as “*Use of wiki-based collaborative writing tasks helped to improve my foreign language writing skills*” was one of the most popular statements with 69.8% of the respondents who agreed or strongly agreed with it. The value of the collaboration was evident in the questionnaire as 39.1% of the respondents agreed or strongly agreed with the statement “*I learned more because of my friends' contributions to the wiki*” (M=3.3). Similarly, the statement “*I learned new things while reading and editing my peers' contributions*” had a mean average of 3.5 with 43.5% of the respondents agreed or strongly agreed with it. Finally, 73.9% of the respondents who agreed or strongly agreed with the statement “*Doing assignments on the wiki helped me to learn from my own mistakes*” (M=3.8). This result was pointed out in the interview as:

If I had a weak or a simple sentence in the text the teacher would probably correct the grammatical mistakes in it. However, while we are working on the wiki my peers rewrite the whole sentence, change some words or add some words into it so that I can see how to make my sentences look more complex and ideas sound stronger.

DISCUSSION

Both quantitative and qualitative data provided multiple sources of information regarding the use of wikis in collaborative writing projects and the role of task type during this process. In this section, the results of

the study will be discussed in light of this data and in relation to theory and previous research.

The Effects of Task Type on Form-related vs. Meaning-related Changes

In this study, learners were engaged in three different meaning-focused tasks that encouraged them to attend to both content and form while collaboratively producing texts. An analysis of the learners' contributions in the wiki pages showed instances of both form-related and meaning-related changes in their writing. However, learners paid more attention to meaning than form, regardless of the task type in these wiki-based collaborative writing tasks. This result may be attributed to the design of the tasks; that is, in line with the suggestions in the literature (Ellis, 2003; Pica, Kanagy & Falodun, 1993), all tasks were designed requiring interactants to request and supply information in order to achieve the same or convergent goal such as defending an idea, introducing a city, or offering a solution to a problem. For the completion of the tasks, negotiation of meaning was crucial while learners tried to convey a message to the readers. This finding supports the findings of Kessler (2009), Arnold et al. (2009), and Kessler, Bikowski and Boggs (2012) which revealed that students paid more attention to meaning than form in unstructured wiki-based and web-based collaborative writing tasks that encourage students to focus on content with an aim of conveying a message rather than focusing on the grammatical structures of the target language. In line with Kessler's (2009) findings, the meaning focus of the tasks may have led students to overlook the grammatical errors as long as they did not interfere with the comprehension of the intended message. Yet, the presence of a high number of form-related changes, especially in the argumentative and decision-making tasks, showed us that attention to form was also considered important during these meaning-based activities. This finding is consistent with Lee's (2010) study in which students collectively attended to grammatical inaccuracies.

The most frequent forms of MRCs were found to be the clarification/elaboration of old information and new information. In Kessler's and Bikowski's (2010) study, the most frequent forms of MRCs were new information and deleted information. Similar to Kessler and Bikowski's (2010) findings, participants in this study did not engage in MRCs which required higher order critical thinking skills such as synthesizing and reorganizing in their wiki changes. As Kessler and Bikowski (2010) argue "without the extensive use of synthesis, it is difficult to succeed at collaborative writing in a wiki setting" (p. 52), and what was found in this study, participants preferred to expand on a currently introduced topic or add completely new information rather than synthesizing pieces of information that existed in the wiki. This finding is also in line with Lee's (2010) study in which participants showed reluctance to editing their peers' postings and showed more willingness to adding text rather than to editing existing writing. Adding a picture to the text was another frequent MRC and this finding is also consistent with Lee's (2010) study during which it was observed that students embedded multimedia sources extensively to support the content of their postings. The distribution of FRCs in the current study is parallel to the distribution of FRCs in Kessler's (2009) study as word choice and spelling were the most frequent types of FRCs he found in his study.

As mentioned earlier, the argumentative and decision-making tasks were selected to be cognitively and linguistically more demanding for the participants than the informative task. Skehan (1998) argues that when a task demands too much attention to its content due to its complexity, learners will pay more attention to its meaning and less attention to its language. This did not necessarily apply here. The participants in this study allocated their attentional resources to form during the more challenging tasks and paid more attention to meaning during a task which they felt more familiar with. However, as can be seen in Table 4, the majority of the MRCs in the informative task was in the form of adding new information, a picture and the clarification/elaboration of information. In addition, only one instance of synthesizing was observed whereas the argumentative and decision-making tasks promoted more use of this skill. It should also be noted that the informative task included the least number of peer corrections among the three tasks. 68% of all changes made in the informative task were self-corrections made by the participants: therefore most of these MRCs were actually done by participants on their own postings.

The Role of Task Type on Self- vs. Peer-Corrections

When all changes made by the learners were analyzed, more peer-corrections than self-corrections were observed in the wiki pages. Task type was also found to have a significant effect on the number of corrections. While the argumentative task promoted the largest number of peer-corrections, both the argumentative and decision-making tasks promoted more peer-corrections than the informative task. This meaningful difference may be attributed to the fact that when students deal with cognitively and linguistically related rigorous tasks, and when they try to convey their own ideas, they tend to be more engaged in collaborative dialogue which Swain (2000) describes as “joint problem solving and knowledge building” (p.102). During the informative task, learners were more familiar with the content as they had done some research on the cities they had chosen prior to preparing a visitor’s guide. They had organized and presented information from memory and written sources in their own words: thus, the informative task lacked the mutual problem-solving orientation found in the other two tasks. Furthermore, during the interview, some learners stated that they preferred to divide the work for the informative task because the nature of the task suited a division of responsibilities since there were different parts in the visitor’s guide. In contrast, during the argumentative and decision-making tasks, all members in the groups tried to either defend their own ideas against an opposite idea to convince the reader or expressed their own opinions in how to solve a problem. As a result, the participants of the study did not feel that they needed to correct one another’s contributions in the informative task, which resulted with less engagement in collaborative dialogue. One of the learners mentioned this during the interview:

... in the informative task, I felt I did not have the right to change what my peers had written since the information presented was an obvious fact known by everyone.

This study supports previous research (Lee, 2010) which shows that open-ended tasks offering opportunities for learners to mutually engage in problem solving results in learners paying more attention to each others’ contributions, and thus increases collaboration.

The Extent of Accuracy of Self- and Peer-corrections

The findings of the present study suggest that although there is no statistically significant relationship between correction type and grammatical accuracy, wiki-based collaborative writing tasks lead to the accurate use of grammatical structures most of the time (94%), as has been observed in previous studies (Arnold et al., 2009; Kessler et al., 2012; Kost, 2011). This finding is also consistent with Elola and Oskoz (2010) and Lee (2010) who conclude that wiki-based collaborative writing activities foster grammatical accuracy. An important feature of using wikis for collaborative writing tasks, as shown in this study, is that it allows opportunities for learners to notice their linguistic gaps by drawing attention to form for the improvement of linguistic accuracy. Learners had the opportunity to revise and improve their writing through feedback from their peers, an opportunity that they may not have had in the absence of wiki technology.

Students’ Perceptions as regards Using Wikis in Collaborative Projects

The results of the focus-group interview and the questionnaire suggest that the learners had a positive experience and enjoyed working collaboratively on the wiki-pages; most felt that their writing skills improved as a result of the project. This finding is in line with the findings of recent studies (Arnold, Ducate, & Kost, 2009; Lee, 2010). Furthermore, the interview responses show that the use of wikis promoted collaborative work by allowing the participants to contribute to the projects without any time or space restrictions. This was also argued by other researchers (i.e., Engstrom & Jewett, 2005; Keith, 2006; Lamb & Johnson, 2007). Moreover, wikis offer an alternative way to extend collaboration outside the classroom and provide learners with opportunities to do extra writing practice, which is also supported by earlier research (Farabaugh, 2007; Lamb, 2004).

However, the participants’ feelings of inhibition to edit each other’s postings, similar to the ones observed

in previous studies by Lund (2008), Kessler (2009) and Lee (2010), were also revealed during the focus-group interviews. Apparently, the self-confidence of students in their language skills got in the way of their correcting grammatical mistakes in the wiki pages, as is evident in the following quote during the focus group interview:

Since we are not completely proficient in English, it was difficult for us to notice all the grammatical mistakes in our peers' work. Even if we thought something needed to be expressed in a different way, we had to search from other sources and be sure that our edits were accurate.

The interview responses also showed that participants felt more comfortable to comment on and edit each other's contributions more during open-ended tasks which required them to exchange opinions, rather than fact, and engaged them in mutual problem-solving activities.

Limitations and Suggestions for Further Research

Although the present study has revealed important insight for collaborative writing in foreign language teaching and learning, some limitations need to be acknowledged. First of all, the study was conducted in seven weeks, which is a short duration for such a study. Although all the participants were computer literate, it was the first time they had used wikis as a component of their foreign language learning courses. Therefore, the novelty effect of the tool may have affected student participation in the wiki-based tasks. Hence, the study could be replicated within a longer time span by allowing the participants to get fully accustomed to the technical features of the tool and also to acquire full appreciation of how to collaborate using wikis. Another limitation was that new groups were formed for each task in this study. This was done purposefully to prevent the familiarity effect on the students' performance and to enable a fair evaluation of their performance as some unresponsive group members may have affected the performance of others in the tasks. Needless to say, working in a new group for each task may have affected the performance of some students. Therefore, the study could be replicated without changing the groups throughout the tasks in order to eliminate the possible negative effect of group dynamics on student performance in the project. Task types were another limitation to the study. An argumentative, an informative and a decision-making task were designed to examine the role of the task type. The study could be replicated using other types of tasks to explore the role of different task types in wiki-based collaborative writing projects.

Unfortunately, during this study, researchers did not have access to the interactions learners had outside of the wiki environment. All evidence of collaboration and cooperation in this study was based on the history pages and groups' final products on the class wiki. Having access to their written or oral discussions and interactions regarding the tasks could have provided valuable insight concerning their collaboration process.

CONCLUSION

It is evident that collaborative writing environments foster an opportunity for L2 learners to co-construct knowledge and become engaged in collaborative dialogue with their peers through scaffolding on each other's language use as well as to improve their linguistic capacity. It is especially important to provide EFL students with collaborative learning environments outside the classroom, as there are fewer opportunities to practice the target language in social contexts in an EFL setting. Learners in this study showed a willingness to learn from each other through scaffolding and feedback. Therefore, this study showed that the affordances of wikis offer an alternative way to extend collaborative interaction and scaffolding beyond the classroom through carefully chosen collaborative tasks, to allow learners opportunities to notice linguistic gaps and organizational problems in their writing, and to have great potential in providing an enjoyable foreign language learning experience.

However, the characteristics of the tasks chosen and types of activities learners engage in clearly bear great importance in constructing the amount of collaborative dialogue and scaffolding among learners: therefore, they should be chosen carefully. Our research indicates that open-ended and meaning-focused tasks encouraged learners to attend to meaning more than form, and tasks that were designed to be cognitively more demanding resulted in more peer-corrections which finds support in relevant literature (Ellis, 2003; Pica, Kanagy, & Falodun, 1993).

Although, participants seemed to attend to meaning more during the informative task, which was selected as a less rigorous task, a significant number of the meaning-related changes were in the form of simply adding more information to existing information, which is not necessarily an indicator of collaboration among learners. One important reason for this was found to be that the informative task was based on more factual information and students could have a division of labor. On the contrary, tasks that do not have clear-cut divisions of responsibilities and that require interactants to request and supply opinions and information in order to mutually solve a problem or reach a goal, promote the greatest opportunities for giving and receiving feedback, and produce a text collectively and collaboratively.

Evidently, task based instruction is very important in fostering interaction and collaboration among learners and the type of task affects the way learners interact with each other. As was mentioned in previous research, in a wiki environment, it is the task that promotes collaborative interaction among the learners and not the technology itself (Lee, 2010; Lund, 2008). Future research that explores more structured wiki environments for peer feedback and the role of language teachers during collaborative writing tasks will certainly contribute to the interpretation of the results of this study.

APPENDIX A. Tasks Designed for the Study

Task 0:	Writing Definitions	Choose 5 concepts and write definitions for them. Explain what they mean to you.
Task 1:	Argumentative Task	Choose one of the prompts below and write an argumentative essay with your partners. <ol style="list-style-type: none"> a) Restrictions should be placed on the use of mobile phones in public areas like restaurants and theaters. b) Censorship is necessary. c) Traditional male role has changed in Turkey over the last 20 years. d) Advertising means manipulation. e) The mass media, including TV, radio, newspapers have a great influence on people and especially on the younger generation. It plays an important role in shaping the opinions and positions of the younger generation. f) Global climate change is man-made. g) Parents should let teenagers make their own decisions. h) Age does not matter in relationships.
Task 2:	Informative Task (Visitor's Guide)	Choose one of the cities in Turkey and prepare a visitor's guide for people who want to visit that city. The guide should include general information on the city, accommodation, food, places to see, and things to do, etc. in that city. You may add photos or videos in it. You may get ideas from the websites below: http://www.visitorsguide.is/ http://www.seattlepi.com/visitorsguide/
Task 3:	Decision-making Task (Dear Abby)	You are working for a website called 'Dear Abby' on which people write about their problems and ask for advice. Read the posting and try to help the person by offering advice on how to solve his/her problem.

APPENDIX B. Coding Categories and Descriptions of Form-Related Changes

Coding category	Description of Category	Data Sample
Word Choice	Student changes a word another student has used.	People should learn how to make the correct decisions
Coordination	Student changes/adds a coordinating conjunction to a sentence.	Finally , I want to mention that your mother...
Spelling	Student changes the spelling of a word.	The most crucial alteration is that a lot of men exhance enhance and change their perspectives on life.
Part of Speech	Student changes the form of a word.	These days, life-conditional living conditions are becoming more and more difficult.
Singular/Plural	Student changes the singularity or plurality of a noun.	Woman Women should work.
Articles	Student adds/changes the article of a noun.	Living conditions are becoming more and more difficult due to the economic crisis.
Prepositions	Student adds/changes a preposition to a sentence.	It is assumed that men are superior from to women...
Subject/Verb Agreement	Student changes the subject or the verb of the sentence to maintain subject-verb agreement.	On the other hand the father were was more comfortable...
Unnecessary Word	Student deletes an unnecessary word from a sentence.	...because also women generally do the housework...
Tense	Student changes the tense of a sentence.	...because also women generally do did the housework and take took care of children...
Punctuation	Student adds/changes a punctuation mark to a sentence.	Thus, unlike woman, men start to accept responsibility....
Word Order	Student changes the word order of a sentence.	Is the second largest port after Istanbul Izmir Port. izmir port is the second largest port after Istanbul Port.
Capitalization	Student changes the caption of a letter.	...I belive that traditional male role has changed in turkey Turkey over the last 20 years
Verb Form	Student chages the form of a verb.	...now women start share to share different responsibilities...
Active/Passive	Student changes an active sentence into passive or a passive sentence into active voice.	...before saying things which are hurt your mother...
Superlatives	Student adds/corrects a superlative structure.	Becoming a teenager is very the most dangerous period of life.
Relative Clauses	Student adds/corrects a relative clause to a sentence.	Individual's occupational self-selection which means a particular work environment...
Negation	Student corrects a double negation in a sentence.	...nobody is not the same...
Modals	Student adds/changes a modal to a sentence.	...and you should offer to study together again.

Note. Cross out words show the data deleted from the text. Bold words show the data inserted i

APPENDIX C. Coding Categories and Descriptions of Meaning-Related Changes

Coding Category	Description of Category	Data Sample	Explanations
New information	Student writes about a sub-topic not previously discussed	İstanbul is the most populated and vivacious city in Turkey. It is located at the northwest of Turkey and costs of the sea of Marmara and Blacksea. İstanbul is a perfect choice who want to go a place which is in the heart of history, art, natural beauties and technology. İstanbul consists of two sides which are connected with each other by two bridges. HISTORICAL PLACES OF ISTANBUL You can see almost everywhere in İstanbul traces of old civilizations such as Ottoman Empire and Byzantine Empire. Every avenue, building even paving stones carry a historical and magical atmosphere especially districts like Eminönü, Üsküdar, Beyoğlu, etc.”	The title “Historical Places of Istanbul” was added as a new piece of information to the existing body of the text.
Deleted information	Student deletes information, ranging from one word or piece of punctuation to the entire body of the wiki	There is no point brooding over it, you sould talk to your friend face to face and explain your feelings and concerns about your friendship and her attitude towards you, so you can feel comfortable.	The crossed out part was deleted from the text.
Clarification / elaboration of information	Student adds to a sub-topic that had already been introduced	You can see almost everywhere in İstanbul traces of old civilizations such as Ottoman Empire and Byzantine Empire. Every avenue, building even paving stones carry a historical and magical atmosphere especially districts like Eminönü, Üsküdar, Beyoğlu etc. <u>Moreover, if you want to learn more about İstanbul and its past, you should visit Topkapı palace, Blue Mosque, Hagia Sophia etc. Topkapı Palace is a very rich museum where the important objects belonging to Ottoman Empire mostly are kept. Blue Mosque and Hagia Sophia also are of interest to a wide range of visitors.</u>	The underlined part was added to the paragraph to clarify / elaborate on the existing information.
Synthesis of information	Student writes a sentence or paragraph that ties together previously written information	In retrospect, the traditional male role has undergone massive changes in terms of social, domestic and business life. The traditional notion of male and female roles has been redefined in our country. In the light of the aforementioned ideas, we can say that men's perspective and the point of view of the society to men's role have improved with the aid of getting educated and disposing of gender bias. There is no question that the man has gradually given up his patriarchal authority. Therefore, the traditional position of women in the society has considerably changed over the last 20 years and as a result of this, one of men has too.	In this paragraph student wrote a conclusion to the argumentative essay that ties together what had already been written.
Link	Student adds a link.	If you want to have information this issue, they can should look link http://en.wikipedia.org/wiki/Interpersonal_relationship	
Re-organization	Student changes the place of a sentence or a whole	Official statistics indicate that women now represent almost fifty percent of the workforce. These days, living conditions are becoming more and more difficult due to the economic crisis. When this effect is taken into consideration, women	The crossed out sentence shows the previous location of the

	paragraph.	should work . This condition affects the authority of man because earning money is his sole power on woman in some period of male life so, when the woman learn how to stand on her own legs, traditional male role disappear easily. These days, living conditions are becoming more and more difficult due to the economic crisis. When this effect is taken into consideration, women should work.	part which was reorganized by the student. Student deleted the sentence from its original location and pasted it to a different location in the text without making any other editions.
Picture	Student adds a picture.		
Video	Student adds a video.		

Note. Adapted from “Developing collaborative autonomous learning abilities in computer mediated language learning: Attention to meaning among students in wiki space”, by G. Kessler & D. Bikowski, 2010, *Computer Assisted Language Learning*, 23(1), 41-58.

APPENDIX D. Questionnaire & Mean Results

This questionnaire was designed to examine students’ opinions on the use of wikis in English language teaching. Please circle the best option which states how much you agree with the following statements. This questionnaire is not going to affect your grade in the course.

Mean	Questions
3.8	1. The wiki interface and features were overall easy to understand.
3.6	2. I liked seeing other students’ interaction with material I posted in the wiki.
3.3	3. I would prefer classes that use wikis over other classes that do not use wikis.
3.7	4. Editing information in the wiki was easy.
3.9	5. Use of wiki-based collaborative writing tasks helped to improve my foreign language writing skills.
3.3	6. I stayed on task more because of using the wiki.
3.1	7. I would like to see wikis used in other courses when I go to my faculty.
3.4	8. Benefit of using the wiki is worth the extra effort and time required to learn it.
3.7	9. I participated in the assignment more because of using the wiki.
3.5	10. Benefits of using the wiki outweighed any technical challenges of its use.
3.4	11. Use of the wiki for the assignment helped me interact more with students.
3.5	12. Technical features in the wiki helped me improve my writing skills in English.
3.3	13. Because of using the wiki, my group was able to come to a consensus faster.
3.5	14. I will retain more material as a result of using the wiki.
3.8	15. I would recommend classes that use wikis to other students.
3.7	16. Compared to other discussion boards and forums, the wiki was easier to use.
3.7	17. Use of the wiki promoted collaborative learning.
3.3	18. I learned more because of my friends’ contributions to the wiki.
3.0	19. Use of the wiki enhanced my interest in the course.

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|-----|-----|---|
| 3.5 | 20. | Wiki projects should be used more often in education. |
| 3.8 | 21. | Wiki tasks were completely related to the course objectives. |
| 3.9 | 22. | I liked the topics used in the wiki tasks. |
| 3.7 | 23. | I liked working together with my friends while creating wiki pages. |
| 3.4 | 24. | I often used the History page to see the previous changes before I edit something on the wiki. |
| 3.1 | 25. | I found the Discussion page useful to communicate with my friends and share my comments. |
| 3.5 | 26. | I learned new things while reading and editing my peers' contributions. |
| 3.7 | 27. | I felt comfortable while editing my peers' work. |
| 3.6 | 28. | I would rather write on the wiki to traditional essay writing. |
| 3.4 | 29. | Contributing to the wiki tasks helped me write better essays in the classroom. |
| 3.5 | 30. | Overall, I had a positive experience with the use of wiki-based collaborative writing tasks. |
| 3.0 | 31. | Doing the assignments through the wiki encouraged me to study more regularly. |
| 3.3 | 32. | Doing assignments on the wiki enabled me to evaluate my own performance. |
| 3.8 | 33. | Doing assignments on the wiki helped me to learn from my own mistakes. |
| 3.8 | 34. | Working on the wiki projects improved my research skills. |
| 3.9 | 35. | I started to view other English language learning methods more positively after using the wiki. |
| | 36. | What did you like most about the wiki assignments? |
| | 37. | What did you find the most challenging about the wiki assignments? |
| | 38. | What would you recommend to improve the use of wikis in the future? |
| | 39. | If there is anything else you would like to mention, please write it below. |

Note. The items were scored on a scale of 1, 2, 3, 4 or 5 points (5 = Completely agree, 4 = Agree, 3 = Not sure, 2 = Disagree, 1 = Completely disagree).

APPENDIX E. Focus Group Interview Questions

1. Could you please explain your overall experience with the wiki tasks?
2. What do you think about the topics in the tasks? Which task did you like the most and the least? Why?
3. What was the most important and interesting aspect of working on a wiki? Why?
4. What was the most challenging aspect of working on a wiki? Why?
5. What is the contribution of the wiki to the group work?
6. Was it easy for you to change/edit your peers' writings? Did you feel comfortable while editing your peers' work?
7. How did the use of wikis affect your overall opinion on foreign language writing?
8. What would you suggest to make the use of wikis more effective?

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