# COLLABORATION THROUGH WIKI AND PAPER COMPOSITIONS IN FOREIGN LANGUAGE CLASSES

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## Abstract

*This study investigates the nature of collaboration on wikis as opposed to the nature of collaboration resulting in a paper composition. In order to understand this phenomenon students were placed in groups of four and asked to write two essays during the semester. On one essay students were asked to produce a composition in the target language on a wiki. On another they were asked to produce a composition that would be given to the teacher in hard copy. Specific research questions included determining to what extent students prefer collaborating to produce a wiki or paper composition. Additionally, we attempted to determine, according to students, what the advantages and disadvantages of collaborating on a wiki composition versus a paper composition are and what effect these advantages and disadvantages might have on collaboration. Data was collected from over one hundred university students through likert-scale type questions, open-ended written questions as well as face to face interviews. Findings indicate that the collaborative process on the wiki reflected true collaboration where students had a hand in each part of the composition. On the other hand, while completing the paper composition, students generally handed their assigned portion to a single student in the group who was designated the compiler and would rarely see or comment on the other group members' work. The authors also provide a discussion of specific advantages and disadvantages of wiki and paper-based compositions and important implications for practitioners.*

# INTRODUCTION

Research has consistently demonstrated the benefits of collaborative learning. For example, collaborative learning has resulted in higher achievement and retention with greater transfer of knowledge from one situation to another than traditional individual learning (Johnson, et al., 1994, p. 53). Collaborative learning gives students the opportunity to engage each other in discussion, take responsibility for their own learning, and become better critical thinkers (Totten, Sills, Digby, & Russ, 1991; Gokhale, 1995).

Wikis have attracted the attention of researchers in foreign/2nd language education as a means of harnessing the great potential of collaboration to expand and accelerate language learning (Levy 2009, Parker & Chao 2007, Kessler & Bikowski 2010, Elola & Oskoz 2010). In fact, the main rationale behind the use of wikis is interdependence and joint creation of knowledge (Lund, 2008).

A wiki is frequently defined as "a freely expandable collection of interlinked Web 'pages,' a hypertext system for storing and modifying information—a database, where each page is easily editable by any user with a forms-capable Web browser client" (Leuf & Cunningham, 2001, p. 14). Because wikis allow multiple users to view and manipulate the same document simultaneously, they are considered ideal tools for collaboration (Godwin-Jones, 2003; Leuf & Cunningham, 2001; "Ways to Use Wiki in Education," n.d, ¶ 1-¶ 7).

Therefore, this study will explore the ways that collaboration differs when students in foreign language classes use wikis to produce a composition in the target language as compared to collaboration while producing a paper composition. This approach will provide insight to the field regarding the value or lack thereof in using Internet technology for collaborative second language writing.

# REVIEW OF LITERATURE

## *Collaboration*

The term collaboration has been used so frequently to describe many so many contexts for learning that it has become almost impossible to create a single adequate definition (Dillenbourg, 1999). For purposes of the present study we will rely on Bosley's (1989) definition of collaboration in writing, which states that collaboration in writing consists of two or more people jointly producing a written record for which all parties will be responsible. Further, some scholars define

collaboration as being distinct from cooperation. Cooperation is a type of group learning where each student is delegated a portion of the project and works on it in isolation from the rest of the group. Each student then submits their portion to one student who compiles the various pieces. On the other hand, collaboration is a type of group learning where each participant is involved in nearly every aspect of the project (Ashcraft and Treadwell 2007, Dillenbourg 1999). Dillenbourg also notes that there is generally some division of labor even in true collaboration, however, group members will still exhibit interaction on parts of the project for which they are not primarily responsible.

Shirouzu, Miyake, and Masukawa's (2002) explanation of roles also sheds additional light on the nature of collaboration. Their work indicates that during collaboration roles are malleable and students frequently shift between the role of doer and the role of monitor. The role of monitor is valuable because the monitor is able to provide a more objective view of the quality of work being produced. The role of doer is of course important because through this role work moves forward and opportunities for learning are provided.

### *Wikis and Collaboration*

Scholars in the field of language learning have long noted the promise that wikis hold for promoting collaborative learning (Godwin-Jones, 2003). Parker and Chao (2007) explain that wikis are ideally suited to collaborative writing due to their open editing and review structure. Authors such as Thorne and Payne (2005) have noted that wikis are unique because they blur the line between author and audience by allowing multiple users to edit and add to the wiki. Additionally, wikis offer other affordances that could aid in collaboration. For example, wikis often annotate additions and deletions to the wiki with the username of the author and the time and date the change was made, thus making it possible for teachers to verify the participation of various group members. Wikis will also generally store changes so that users can revert back to prior versions of a page within a wiki.

Other researchers have examined the nature of collaborative writing using wikis in second language settings. Mak and Coniam (2008) investigated authentic writing through the use of wikis by English as a Second Language learners. They found that the students' sense of unity was strengthened because all group members had equal access to the most recent version of the assignment and could effectively build on the ideas of their peers (p. 447). Lund's (2008) study of wikis in English as a Foreign Language suggests that the use of wikis to create collective products encourages more production in the target language. Elola and Oskoz (2010) also

found that students who used wikis to write collaboratively in their target language generally felt that the quality of their writing was better than when they wrote individually.

Taken together, these studies suggest that use of wikis in the foreign language classroom can enhance collaborative writing and promote language production. The present study will seek to build on previous work on second language writing in wikis by comparing students' perspectives on the process of collaboration when creating a paper composition and a wiki composition. Additionally, we have chosen to focus on students' perceptions about collaboration and technology since, in our experience, most collaborative writing at the university level takes place outside of class. Therefore students can provide firsthand information on the nature of their collaboration that is not available to anyone else. This is a unique perspective because most studies in this area report on what happens when students use wikis collaboratively, but are not able to report what the same students might have done when asked to create something in a group through another medium.

## METHODOLOGY

### *Philosophical Underpinnings of Present Study*

Interpretive or qualitative research assumes that individuals subjectively construct human experience and seeks to create a thick description that includes extensive quotes from the participants (Creswell, 2007; Merriam, 1998). Qualitative methodology seems particularly suited to this study since we are examining collaboration through the lens of sociocultural theory, both of which assume that humans come to greater knowledge and understanding through joint creation of knowledge. Additionally, we proceed on the assumption that students will co-construct the nature of their collaboration to produce the paper and wiki based compositions. Our assumption of co-construction is further incentive to utilize a qualitative approach. With that said, some quantitative data has been collected and reported but this is mainly to provide a richer backdrop to our reporting of the students' experience.

### *Research Questions*

This study sought to understand the experience of students collaborating on a group composition using a wiki in comparison to the experience of the same students collaborating on a traditional paper-based group composition. The research questions for this study were:

1. If students were required to do similar collaborative compositions in the future, to what extent would they prefer the wiki or the paper?
2a. According to students, what are the advantages and disadvantages of collaborating on a wiki composition versus a paper composition?
2b. What effect might these advantages and disadvantages have on collaboration?

### Settings/Participants

Six sections of a first semester university-level Spanish course at a large private university in the U.S. were selected for the study. Students who participate in this course generally enter with approximately two years of high school Spanish and these students would be considered false beginners or low intermediates. Three of the sections (1, 2, 8) met during the morning hours (7:00, 8:00, and 9:00) whereas the other three sections (4, 5, 9) met during the afternoon hours (12:00, 2:00, and 4:00). Other sections of the course were not included in the study because they were accelerated courses, which would include the following semester of Spanish as well. Also the teacher of another section did not participate because of time constraints. Classes consisted of between 12 and 22 students and a total of 107 students participated in the study. All classes were taught by graduate students of Spanish at a large private university in the United States. All classrooms were equipped with computer technology including a computer console with Internet connection and DVD and VHS player all connected to a projector. Students at the university have access to a wireless network offered by the university at almost all locations on campus, and multiple computer labs with Internet connection and common software. Additionally, almost all students have a personal computer or laptop and Internet connection in their residence. Due to the widespread penetration of Internet technology, the researchers felt confident that the participants had sufficient access to and working knowledge of the Internet and related technology to complete the assignment.

### General Procedures

*Researcher's Role.* The researchers gained access to the students and instructors who participated in this study, through their respective positions as supervisor of intermediate Spanish and graduate instructor of the same. The assignments described here were modifications of existing writing assignments. As researchers and participant observers, we briefly trained the instructors on how to proceed with the group compositions, including how to access and manipulate the wiki and create

usernames and passwords. We also provided them with a written summary of this information and created an instruction sheet for the students.

*Topic selection.* We, as researchers, prepared two collaborative writing assignments based on the cultural topics of the class text. The first collaborative assignment was given during the third chapter of the class text and the second collaborative assignment was given during the sixth chapter of the class text.  For both assignments the process was basically identical except that the cultural topics changed according to the chapter themes. Groups could choose from three different topics in each chapter for example, "Los Aztecas: Describe the daily life of the Aztecs. Focus on food, clothing, customs, work etc."

### *Assignment Procedures – Paper composition*

In each class, several groups of four or five students were randomly assigned to work together by their respective instructors. Each group was given a prompt relating to culture topics from the chapter theme of the textbook. Students were then asked to work together to create a composition of about six to eight pages in length as a response to the prompt.  Students were not given any further instruction about how the groups were to work. This was a strategic move on our part as researchers. We believed that by giving little guidance as to how the groups should work together we would be able to see how wikis change the nature of group efforts based on the affordances of wikis rather than the intervention of instructors.

Teachers provided students with a copy of the rubric that was to be used to evaluate their work. For the chapter three assignment, the three afternoon sections composed using the wiki, whereas the three morning sections created traditional paper-based compositions. For the chapter six assignment, the situation was reversed: the three morning sections composed using the wiki while the three afternoon sections created traditional paper-based compositions. The purpose of the shift was to control for the effects of students preferring the later assignment, as students would likely have developed a relationship with one another over the course of the semester, which would have facilitated group work.  It also allowed us to control for morning versus afternoon courses since in our experience morning courses often report less satisfaction overall with their classes.

Approximately, two weeks later, the groups were to have completed a rough draft. In the classes that were working on the paper composition, each group brought two hard copies of the rough draft to class. One was turned in to the teacher and the other was given to another group. The other group examined the composition for ten

to fifteen minutes in class and provided feedback on the draft. Students were provided with the rubric that would be used to score the final draft of the compositions and instructed to provide feedback regarding the criteria of the rubric. It was not feasible for every student to peer review every groups' paper composition as this would require an inordinate amount of class time and excessive printing costs.

We felt that it was important for students to have the opportunity to provide feedback. Receiving feedback in this way should help students to engage in noticing and further develop their interlanguage. Also, being able to receive feedback and having the opportunity to make revisions should encourage students to look at writing as a process, one which includes multiple drafts.

Later, outside of class, the teacher of each section graded the rough drafts on completeness, length, organization and polish. The purpose of the teacher grading the rough drafts in this manner was to insure that the groups had produced a fairly complete draft so that other students from other groups could provide legitimate feedback.

A few days later each group turned in a final draft of their composition. Then the teachers graded each composition using a rubric. The rubric included criteria to assess content, organization, grammar and mechanics, vocabulary, timely completion, and aesthetic appeal. Based on the evidence that supports the usefulness of self-assessment in foreign language learning (Blanche & Merino, 1998), students also self-rated their individual participation in giving feedback as well as producing the composition. Thus each student's grade was made up of the group's score on the rough draft and the final draft plus their individual participation score.

*Assignment Procedures – Wiki composition.* The procedures for the wiki composition followed a similar pattern with a few important differences. Initially, one of the researchers created a wiki for each class using PBwiki.com, a wiki service originally built for educational uses. Within the class wikis, the researchers created a wiki page for each group. The instructors of each course generated a username and password for every student, which allowed them to access the wiki to compose or edit their groups' compositions and also to view and comment on the pages containing the other groups' work.

As with the paper composition, students were also placed in groups, given a prompt and were to have completed a rough draft two weeks later. As was the case with the paper composition, they were given no instructions about how they should work together on their composition. On the day that the rough draft was due, all of

the students were required to access the class wiki, read all of the groups' compositions, and then leave feedback on the comment board of each composition by a specified time of day. As a consequence, every composition was read and critiqued by every student. The groups then took into consideration the feedback and made any changes they felt necessary. A few days later, the teachers of the various sections assessed the final versions of the wiki compositions in the same manner as the paper composition using the same rubrics.

*Nature of the wiki service.* The wiki service utilized in the project was PBwiki.com. As is usually the case, the wikis included comment boards that enabled students to discuss their work without actually making changes to the composition. The wikis also included a record of changes made to the page noted with the date, time and username of the author of the changes. Also, the wikis could be accessed at any time by the students and their instructors, who were then able to observe the current state of each composition. Other features of the wiki service utilized include a discussion board where comments could be made that would always be visible when viewing the page. This is in contrast to other services such as wikispaces, which provide a discussion board for each page but in a separate tab so that when one is viewing the page the comments are not visible. As is the case with most services with which the authors are familiar, users can upload images or documents and create hyperlinks. Other functionalities that PBwiki provided are the ability to format text with specific fonts whereas some providers only provide one font type so that if users would like another font type they may turn to a word processing program and copy and paste the text into the wiki page.

*Institutional Review Board approval.* We received approval to conduct the study from the University Institutional Review Board. Additionally, all of the students in each section willingly signed the consent form allowing us to use their scores, their responses on the questionnaire, and also allowing us to interview selected participants.

*Sources of Information.* In an effort to triangulate the data and provide a clearer picture of the phenomena in question, three types of data were collected, responses to Likert-scale items, written responses to open-ended questions and interviews. The Likert-scale items and the open-ended questions were administered in person by the researchers to all of the participants included in the study (see Appendix).

Later, four individuals were purposefully selected for interviews to better understand their experiences with the assignments. These students were chosen

because of the reflective nature of their responses to the open-ended items on the questionnaire.

### *Data Analysis*

*Qualitative data analysis.* After transcribing the qualitative data from the questionnaire and interviews, we used NVivo software to develop categories based on recurring themes we identified. We then coded all information in the database through the process of open-coding (Corbin & Strauss, 1990). Employing the constant comparative method (Glaser & Strauss, 1967), we continuously compared themes to collapse categories of information until each category was mutually exclusive.

*Quantitative data analysis.* After students completed the questionnaires (see Appendix), numeric values one through six were assigned to the responses for each discrete point item in order to create equal interval scales (from left to right). Descriptive statistics were calculated for items 1, and 2. An analysis of variance (ANOVA) was then conducted for items 1 and 2 in order to ascertain if there was a significant difference between any of the classes. The alpha level was set at .05 for the entirety of the quantitative analysis.

# RESULTS

### *Research Question One*

If students were required to do similar collaborative compositions in the future, to what extent would they prefer the wiki or the paper?

In order to answer this research question, responses to item 2 from the questionnaire were analyzed. Item 2 asked participants to indicate which collaborative composition they would prefer to do in the future (see Appendix). Each item on the scale was given a numerical value from 1 to 6 with 1 representing a preference for the wiki composition and 6 representing a preference for the paper composition. Thus, a mean below 3.5 indicates a preference for the wiki, while a mean above 3.5 indicates a preference for the paper-based composition.

The descriptive statistics of all classes combined suggest that students would somewhat prefer to use a wiki for a future collaborative assignment (All Classes: M=3.15, SD=1.59). Table 1 provides the mean for each of the class sections, which indicates that four of the six sections preferred the wiki for collaboration.

**Table 1: Descriptive Statistics for Item 2 Responses**

| Class | *N* | Mean | SD |
|-------|-----|------|------|
| 1 | 16 | 3.69 | 1.66 |
| 2 | 18 | 3.83 | 1.54 |
| 4 | 20 | 2.85 | 1.57 |
| 5 | 18 | 2.67 | 1.33 |
| 8 | 13 | 3.35 | 1.55 |
| 9 | 22 | 2.77 | 1.66 |
| Total | 107 | 3.15 | 1.59 |

Since the descriptive statistics revealed that some of the classes preferred one form of collaboration over another, it was possible that there was an effect from the influence of the teacher or other confounding variable such as the assignment or the order in which they received the assignment. The possible effects of these confounding variables would likely be seen in the means of the individual classes since all of the groups within a given class received the assignments in the same order and were influenced by one instructor. In order to ascertain how different the classes were in terms of their preference for wiki or paper collaboration, an analysis of variance (ANOVA) was conducted. The results are shown in Table 2.

**Table 2: ANOVA for Responses of All Classes on Item 2**

| Source | *df* | Sums of Squares | Mean Square | *F*-ratio | *p* |
|--------|------|-----------------|-------------|-----------|-----|
| Group | 5 | 22.66 | 4.53 | 1.87 | .11 |
| Error | 101 | 245.04 | 2.43 | | |
| Total | 106 | 267.71 | | | |

The preferences students expressed for collaboration through either the wiki or paper composition as demonstrated in the means of the class sections are not statistically significant, suggesting that the differences in class means could be due to chance and that the teachers' influence did not cause a measurable difference in their classes' preference for one form of collaboration or another.

### *Research Question Two*

According to students, what are the advantages and disadvantages of collaborating on a wiki composition versus a paper composition and what effect do these advantages and disadvantages have on collaboration?

Based on the questionnaire and interview data, several themes emerged from the lived experience of students that indicate the benefits of collaborating through the two mediums in question. First, students seemed to feel that specific affordances of the wiki facilitated greater collaboration and joint creation of knowledge. On the other hand, students seemed to feel that face to face communication was still an important part of collaboration and that face to face communication occurred more through the paper composition. Additionally, students felt the process of collaborating on the paper composition was smoother because the tools used to produce the paper composition such as word processing software, email and paper, were more reliable and better suited for producing a polished document.

Through the use of students' comments, we will further delineate the advantages of wiki collaboration followed by the advantages of collaboration on a paper-based composition. Students' names have been changed to ensure anonymity and encourage open responses.

### *Advantages of Collaboration through a Wiki*

*"Being Able to See the Current State of the Project"*
Many students appreciated that they could see the composition in its most current iteration at any given time on the wiki, which, of course, was not possible for the paper composition. This idea appeared in nearly one third of the 109 questionnaires and all of the interviews. Many of the participants cited it as the greatest advantage the wiki had to offer. Jamie's questionnaire response is typical: "[I liked that] we were all able to see the [wiki composition] at any time we wanted and see other revisions."

*Avoiding duplication of efforts.*
Being able to view the current state of the composition also helped the participants to avoid duplication of effort. Amy wrote "you could see what everyone was doing so if two people were working on the same aspect or topic you could make sure you weren't writing the same thing."

The wiki only permitted one person to make changes at any given time. This also helped to avoid duplication of effort. Stephanie noted in her interview, "With the wiki only one person can work on it at a time . . . and then someone else can go in and just move things over."

Conversely, she noted that on the paper composition, "Once . . . [another group member and I] were both making corrections at the same time and we emailed it back to each other and we didn't know how we were going to put them together."

Some participants felt that seeing the current state of each other's work helped them to make the composition more fluid and unified. Jennie's statement on the questionnaire is representative, "It was easy to see what other members of the group had done… It was easier to create a paper that flowed well, despite the fact that it was written by six different people…"

*Motivation and accountability on the wiki.*

Collaborating through the wiki also seemed to change the group dynamics. Many participants felt that being able to view the current state of the composition on the wiki led to greater motivation and accountability. It was important to Angela that "the wiki gave proof of who did what and motivated others to do their share." Jessica's comment was also representative, "You knew if people were fulfilling their responsibilities, [and] you knew how to change your level of participation to benefit the whole." This is a dramatic change from collaborating on a paper composition since the medium itself generates the social pressure to produce. In contrast, with a paper composition, social pressure to participate was generated exclusively through email or in-person communication with group members. With the wiki, simply logging in seemed to induce accountability and motivation.

Similarly, students seemed to feel motivated and accountable while working on the wiki knowing the professor could monitor their contributions. Stephanie commented, "I felt like 'Oh no! I'm the only person that hasn't done anything yet! I better do something because the professor is probably going to be on here and see.'"

*Editing and Communication*

The processes for editing each type of composition were very different. While editing the wiki composition, all were involved in the editing and revising process of the composition, whereas the traditional paper composition generally relied on one editor.

Rebecca noted "when you use the wiki, you all can easily take part in the editing process instead of having to rely on one person." Amy stated, "I was able to see and

provide my own correction on the final draft." These comments suggest that the nature of wikis encouraged joint creation of knowledge, as Bonnie stated "With the wiki composition the load of formatting, collaborating, and editing wasn't left to one person as it was, and usually always is, with the [paper] composition." Bonnie may have felt that responsibility keenly since, as Kristen noted, "[Bonnie] was in charge of putting it all together… I never saw the comments that were made, and so, I know [Julianne] and I were kind of like 'I hope everything's o.k.'"

Several participants felt that the wiki facilitated more communication and thus enhanced the editing of the composition. Marie wrote, "I did not talk to my group *nearly* as much on the paper composition as I did on the wiki." Katie felt that "communication was better in that it was more frequent. [There were] lots of notes and collaboration back and forth."

However, joint creation of knowledge can demand more from each group member and for a few students this was not always appealing. According to Janet, "It was somewhat easier to have someone in charge of making the paper fluid." Valerie added, "We emailed it to one person to print. [It was] very simple!" "I found using email to communicate and having one person compile the finished product was much [simpler] than navigating the wiki," wrote Anna.

*Convenience of Scheduling*

A large number of participants enjoyed being able to work on the wiki composition at any time that was convenient without having to formally meet as a group. Essentially, the wiki removed the obligation of the students to work around each other's schedule. Justin wrote, "I liked that we could 'get together' anytime we wanted." "I liked the wiki better because I was able to work on it when I had time and wanted to and I didn't have to add another group meeting to my schedule," wrote Ashley.

### ***Advantages of Collaboration on a Paper Composition***

*Face to face Collaboration*

The importance of meeting face to face with other team members was one of the most prominent themes that appeared in the questionnaire responses and in the interviews. Participants felt that working together on the paper composition fostered more face to face collaboration, which led to more accountability. Katie commented in the questionnaire:

[The paper composition] was so much easier because you had to get together. Human contact forced everybody to take responsibility for their

portions; on the wiki it was easy to do a poor job because nobody ever confronted you face to face.

Julianne agreed that face to face communication is important for accountability. Speaking of the wiki composition she stated:

I think there is something about when you're communicating online there's not the same kind of accountability, almost. So when I'd say [through the wiki] "We need to have an introduction and a conclusion," no one would respond to me because you're not face to face . . .

Tim agreed stating, "One-on-one meetings made it clear who was going to do what, you could work together and voice opinions together."

Others associated the paper composition with face to face collaboration and communication in real time. Melissa wrote, "[On the paper composition] we were able to talk . . . problems out and receive instant feedback rather than wait around on the computer for others to log in." Similarly, Tim felt face to face communication on the paper composition was better because "it is easier to understand someone's ideas or thoughts by talking with them rather than reading what they typed."

*Technical Difficulties*

Approximately one third of the questionnaire respondents reported technology problems while producing the wiki composition. These problems included difficulties formatting the text, uploading pictures, compatibility issues with the web browser and the wiki service, among other things. Anna summarized her and her colleagues' experience well, "The wiki was difficult to use, there were many problems trying to upload things, editing, and trying to format it." These problems led Kimberly to exclaim, "I hate electronics!"

*Formatting the text.*

Participants almost universally expressed concerns about the difficulties they encountered formatting the wiki properly. Jennifer wrote, "Figuring out the technicalities of the [wiki] was difficult. There were fewer formatting options to make the paper look nice . . . The wiki was complicated and the formatting was difficult to work with. The paper was easier to put together."

The font type, color, style and size as well as the spacing between lines would be inconsistent even after the participants changed it in an attempt to make it uniform. "The wiki was confusing to use and didn't work when I tried changing formatting issues," wrote Eliza.

Another issue related specifically to foreign language was the difficulty participants encountered with typing special characters such as accents and tildes required by Spanish. In order to remedy the problems associated with formatting the text, many students reported copying the text from the wiki into Microsoft Word, reformatting the text, and then copying the text back into the wiki. Julianne said, "… sometimes the spacing would get weird and you couldn't fix it there without having to copy it all back into Word…"

*Browser Compatibility.*

Apparently, not all of the most common Internet browsers functioned properly on the website. This was especially a problem with students using a Macintosh computer system because Safari (the Apple Internet browser) did not function well with the wiki. "The wiki was helpful, but for me, it was very frustrating because it didn't work on Macs [since] it didn't work on Firefox or Safari."

*Wiki not always dependable.*

Participants also experienced other glitches that made them feel that the wiki wasn't very dependable. Jane wrote, "Sometimes I would post something and it wouldn't show up." Other minor problems frustrated some participants. For example, "When [Rosa] made a comment at 3:30 PM it recorded it as 4:30 PM." This proved frustrating to learners because they were required to post comments to other groups' projects by a certain deadline.

## DISCUSSION AND IMPLICATIONS FOR TEACHERS AND SUPPORT PERSONNEL

### *Nature of Collaboration*

The findings put forth in this paper suggest that students work together in very different ways when completing the wiki and paper compositions. According to Ashcraft and Treadwell (2007), the group dynamic on the wiki could be considered collaboration while on the paper it could be considered cooperative. Cooperative learning is a type of group learning where each student is delegated a portion of the project and works on it in isolation from the rest of the group. Then each student submits their portion to one student who compiles the various pieces. This is nearly identical to the process students reported on the paper composition where students delegated portions of the assignment to each other, worked on them individually and then emailed them to an editor who compiled and formatted them.

In collaborative learning, however, each student takes the lead on a particular portion of the assignment, but each has a hand in all parts of a project by commenting and contributing to others' ideas (Ashcraft & Treadwell, 2007, p. 142). Although there was division of work on the wiki composition, the unique features of the wiki allowed each member of the group to take part in reviewing and editing the whole. It is interesting to note that students were not instructed to select only one editor or compiler on the paper composition. Likewise, they were not instructed to all participate in editing on the wiki composition.

This type of collaborative effort suggests that the wiki provided certain affordances that allowed students to engage in joint creation of knowledge to a greater degree than on the paper composition. Students frequently mentioned that being able to see a record of changes made and having access to the current state of the composition was extremely valuable. These affordances allowed students to provide insights, tweaks and suggestions on the group's efforts that would simply not have been possible using the tools students turned to in order to produce the paper composition.

The increased collaboration that occurred on the wiki assignment corroborates previous research on wikis by Mak and Coniam (2008). Mak and Coniam found that the unity within collaborative writing groups was strengthened by being able to see the most recent version of their work and that students' were able to avoid overlapping ideas and duplication of effort. This study also found that being able to see the most current draft was an advantage because learners felt accountable for their efforts and thus motivated to participate. These findings lead to the following implications about collaborative assignments in general.

**Implication #1** Encourage collaboration through structure of assignment regardless of medium.

When asked to collaborate, today's students *will* turn to technology, often email. However email, perhaps by its nature, did not lend itself to collaboration. To remedy this, all collaborative assignments, regardless of medium, should specify that all group members have a hand in reviewing and commenting on the various parts of the assignment. This research does seem to indicate that, according to students, wikis facilitate greater co-construction of knowledge, but the structure of the assignment itself can have a great impact on the way students' produce group work.

*Electronic versus face to face communication*

While some features of the wiki appeared to increase collaboration, others seemed to create collaborative paradoxes in participants' minds. For example,

students frequently expressed delight at being able to work on the wiki composition, anytime and anywhere and some expressed that communication was "wiki-quick" and "instant." Some also believed that the wiki fostered accountability since students and the teacher could easily determine who had contributed what to the assignment.

Ironically, however, other students expressed frustration at the lack of face to face communication while working on the wiki and pleasure with the relatively more frequent face to face communication on the paper composition. These students claimed that face to face communication fostered a sense of "accountability" and was more "instant."

However, it is unclear why participants felt this way since participants were never discouraged from collaborating face to face on the wiki composition; they simply chose not to. Sam wrote, "The paper composition allowed us all to get together face to face, whereas on the wiki, we could only interact online." Julianne noticed this paradox and stated in her interview that "with the wiki I think of it being kind of individual in that you just do it on your own time on your own computer." Kristen added that with "the paper composition, group members were much more willing to stay after class and talk….With the wiki we felt like we didn't have to meet and so sometimes it was more complicated." Notice that the only reason given for not meeting face to face is that "we felt like we didn't have to." It may be that the wiki makes it possible to collaborate online sufficiently to accomplish at least the minimal goals of the groups so individual members do not feel the need to discuss the assignment face to face even if meeting face to face has advantages.

This raises another question, "If the students were able to accomplish their goals without face to face collaboration, why did many students miss it?" Perhaps students missed face to face communication in part because generally communication through the wiki does not take place in real time. This means that students were not able to immediately confirm their message was received and thus were not able to request or provide clarification in the moment. Melissa states that the greatest advantage of the paper composition was face to face communication because "we were able to talk about things [and talk] problems out and receive instant feedback rather than wait around on the computer for others to log in."

Related to communication in real time, perhaps it is also easier to perceive mutual understanding when speaking face to face. Participants may have felt that the communication that takes place when talking in person helped them receive confirmation from the other members of their group that they had been "heard" and understood. Since they have confirmation of understanding, group members know

what is expected of each of them. Such confirmation may lead to mutual accountability because the entire group is aware of what each individual has agreed to do, which can be very important in a group collaborative effort, especially when one's evaluation is dependent on the work of another group member.

Taken together, students' comments seem to indicate that the wiki seems to foster accountability by allowing group members to see what others have done. Face to face communication fosters accountability by allowing group members to know what others have committed to do.

Viewed through a sociocultural lens, this may be telling us that the affordances of the wiki facilitate co-creation of knowledge in that they visually communicate students' contributions to the product. On the other hand, meeting face to face facilitates co-construction of knowledge because understanding can be negotiated and scaffolded so quickly and efficiently. This analysis leads to the following implications for teaching.

**Implication #2** Build face to face communication into wiki projects while emphasizing the affordances of a particular wiki service.

This could be accomplished by allowing some class time for groups to get together or simply requiring groups to meet a certain number of times in person. Additionally, teachers may want to model how groups can utilize wikis' affordances, such as discussion boards or records of revisions to facilitate groups' efforts.

**Implication #3** Highlight the unique features of wikis to create accountability and motivation.

Teachers should emphasize to students that all members of the class, particularly their group members and the teacher, will be able to see clearly who is contributing what and when to the assignment.

*Technology concerns*

Wiki users experienced many technological problems with formatting of text, insertion of pictures and other media, browser compatibility, and time markers for posts. These were serious disadvantages for the wiki composition that may have influenced the participants' perceptions of and performance on the wiki composition. In comparison, the participants were generally very comfortable with the word processing software they used on the paper composition.

These problems, while important, are not related to the basic nature of wikis per se. Rather, they are largely issues with the particular wiki service that was being used. However, very few if any wiki services that individual teachers are likely to use will have the sophistication and refinement of widely used word processing software. This is a disadvantage that teachers should weigh when considering the use of wikis in the foreign language classroom.

**Implication #4** Experiment extensively with a wiki service before implementing a wiki project.

We recommend that instructors or lab personnel investigate a wiki service by using the wiki in the same ways that will be required of students, e.g. typing in the target language, formatting text, embedding video and images, creating hyperlinks, and using the wiki through a variety of browsers on both Macs and PCs and noting possible problems with time stamps or other features that may be particularly relevant for specific assignments

## CONCLUSION

This study sought to understand the ways in which students' joint efforts at composing in the target language differed depending on the medium of the final product. The main finding of this project is that use of the wiki tended to foster greater collaboration than the paper composition; nevertheless, results indicate that each medium possesses certain benefits. We found that in both the wiki and paper compositions students divided their duties so that each group member would be responsible for a particular portion of the work. However, when using the wiki, students reported participating in all aspects of the project even those for which they were not specifically responsible. This contrasts with the paper composition where students would often compose their portion of the assignment in isolation and pass it to a designated member of the group who would compile it. We also found that many features of the wiki fostered accountability by allowing the teacher, and other group members to see who had contributed what and when. One surprising finding was the importance students placed on face to face interaction. Students appreciated the opportunity to connect with fellow group members through the wiki but lamented that often the communication was asynchronous. Students felt that the richness and immediacy of face to face communication provided clarity and encouraged accountability. Thus we as researchers recommend that teachers in 2nd language classrooms harness the benefits of wikis for collaboration but create space in collaborative assignments for face to face interaction.

# LIMITATIONS OF STUDY

*Researcher Biases.*

We were interested in doing research on the use of wikis as a collaborative tool because of our personal interest in Internet technology. Although we sought to bracket any pre-conceived notions about the use of wikis during data analysis, we recognize that we value the use of the Internet for collaboration.

*Uncontrolled Variables.*

As researchers, we made considerable efforts to control for extraneous variables that may have influenced students' opinions particularly on the questionnaire. However, with classroom-based research it is possible that even with these efforts, some of the results could have been influenced by extraneous variables such as when they received their grades or the instructors' preferences. Further, the unforeseen technical problems may have negatively influenced the participants' attitudes toward the wiki.

*Recommendations for Further Research.*

As mentioned previously, students enjoyed the convenience of working on their own time through the wiki yet recognized the value of meeting face to face. Future research should investigate the benefits of face to face communication when a wiki or other online collaborative tool is being used. Research could also examine in what ways face to face communication could supplement the online communication and how much face to face communication is necessary to optimize collaborative learning.

The data also suggest that students generally preferred peers' feedback given on the wiki composition. This study did not, however, carefully evaluate the differences in the kind, quality, or quantity of feedback given.

Additionally, this study limited itself to examining students' perceptions about collaboration on wikis and paper compositions. However, it would be important to also examine the work that students produced. This could help those involved in language teaching to determine if the different processes that students went through on the two assignments led to different types of learning or linguistic production.

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# APPENDIX

## Questionnaire

**Name:_____ Section of SPAN 105:_____ Professor:_____**

*Please circle the answer with which you most agree.*

1. In terms of the insightfulness and helpfulness of the feedback given by other students, I felt that generally their feedback was…

| much better on the wiki composition | somewhat better on the wiki composition | slightly better on the wiki composition | slightly better on the paper composition | somewhat better on the paper composition | much better on the paper composition |
|---|---|---|---|---|---|
| | | | | | |

2. If I had to do another group composition, I would…

| strongly prefer to use a wiki | somewhat prefer to use a wiki | slightly prefer to use a wiki | slightly prefer to do it on paper | somewhat prefer to do it on paper | strongly prefer to do it on paper |
|---|---|---|---|---|---|
| | | | | | |

3. In what ways, if any, was it easier to work with the other members of your group on the paper composition than on the wiki composition?

4. In what ways, if any, was it easier to work with the other members of your group on the wiki composition than on the paper composition?

Do you have any additional comments?