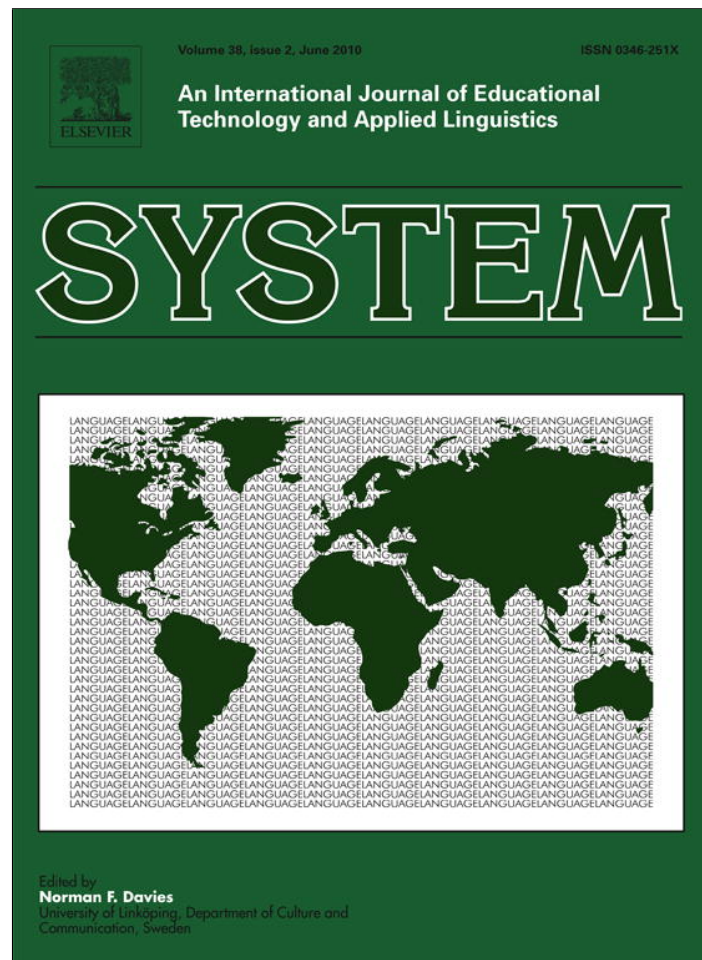


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# Learning outcomes and students' perceptions of online writing: Simultaneous implementation of a forum, blog, and wiki in an EFL blended learning setting

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## Abstract

This paper examines the effectiveness of three different online writing activities in formal university education: forums, blogs, and wikis. Constructivism – reflective and collaborative learning fostered by scaffolding – provides a main support for their use in education. Prior research regarding the use of blogs and wikis, especially in language education, is reviewed. The lack of detailed examination to determine learning outcomes, the absence of an evaluation mechanism, and the special difficulty language education holds for their appreciation are noted.

The latter half of the paper presents exploratory research executed by the authors on the usage of forums, blogs, and wikis in an English as foreign language (EFL)-blended learning course in a university in Tokyo, Japan. A mixed-method approach was applied with survey, interview, and text analysis used for triangulation. The survey revealed students' positive perceptions of the blended course design with online writings – wikis being the most favorable, followed by blogs and forums. Qualitative text analysis of forum and wiki writings showed progress in their ability to differentiate English writing styles. The interview script analysis clarified the different merits students perceived from each activity. The variations provided by the blended course design served well in meeting challenges and were fun for them.

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*Keywords:* Forum; Blog; Wiki; Blended learning; Reflective learning; Collaborative learning; Text analysis; EFL

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## 1. Introduction

This paper considers the learning outcomes and learners' perceptions of three asynchronous online writing tools – forums, blogs, and wikis – in foreign language teaching practice. Specifically, the study investigates the simultaneous use of these three online writing tools, because this approach closely matches the reality for learners today, in which

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text messages, e-mails, blogs, chats, and forum discussions are popular methods of day-to-day communication (Oblinger and Oblinger, 2005).

The table below highlights different characteristics of forums, blogs, and wikis and provides relevant definitions (Table 1).

The characteristics above are indicative of and, like other network tools, subject to social construction as end users fine-tune the tools based on their individual and context-relevant needs (Bijker, 1999). In the present research, the last three characteristics of each medium – the work-mediated perspective (collective or individual), the activity-relevant orientation (exchange, express, or change), and the mood-relevant orientation (cooperative, individual, or collaborative) – were key features with regard to students' opinions and learning outcomes.

## 2. Literature review

Prior research that focuses on the use of these tools in foreign language education, and preferably, but not exclusively, in tertiary education, was chosen for review due to various similarities with the participants in the present research in terms of cognitive and mental developmental stage factors.

### 2.1. Forums

Research on the use of forums has been approached in very different ways. Savignon and Roithmeier (2004), a CALICO journal award paper, is representative because of its use of a forum as a platform for intercultural exchange. The exchange took place between students learning German as a foreign language (GFL) in the US and students learning English as a foreign language (EFL) in Germany (number of participants unknown). Students in both groups had studied the target foreign language for different amounts of time. Four discussion topics were set up, and the discussion session lasted for three weeks. Employing the Hallidayan *cohesion* concept as its core discourse analysis methodology (Halliday and Hasan, 1976), the research found many specific methods that were used to sustain a collaborative dialogue in the students' postings, such as uptake of lexis, uptake of content-related ideas, and particular uses of references, quotes, headings, and personal examples to mitigate conflicts.

A study by Fitze (2006) compared the effectiveness of face-to-face (F2F) and online instruction, focusing on forum use in English as a second language (ESL) instruction. The participants ( $n = 27$ ) in this study consisted of two classes of similar composition in terms of gender, culture, language, and English proficiency. The same essay writing activities followed by topic discussions were conducted either face-to-face or online via a learning management system called WebCT. The Gini coefficient analysis method – a statistical process in economics that provides an index of the distribution of wealth – was applied to assess the students' participation and thereby compare the textual data from the two modes of instruction. The study found that 1) total production by word count did not differ significantly; 2)

Table 1  
Characteristics of forums, blogs, and wikis.

	Forums	Blogs	Wikis
Time orientation	Past and present	Past to present	Present
Presentation	Threaded	Reverse chronological	Final product
Structure	Controlled by moderator	Controlled by author	Open
Administrators	One/many	One	Many
Editing	Not allowed	By creator	By many
Consciousness orientation	Process	Process	Product
Work mediation	Collective	Individual	Collective
Activity orientation	Exchange	Express	Change
Mood-relevant orientation	Cooperative	Individual	Collaborative

online writing exhibited a larger lexical range; 3) online writing exhibited more interaction; and 4) online writing led to greater equality in participation.

The study by [Montero et al. \(2007\)](#) is unique in that it analyzed discussion-form discourses focusing on the use of modal auxiliaries (must, should, will, etc.) with respect to *orality* (speechlikeness), as observed by [Yetes \(1996\)](#), and *formality*, as defined in a review by [Piqué-Angordans et al. \(2002\)](#). These constructs were examined with EFL computer science students at universities in Spain. The forum postings for topical discussions were analyzed using a lexical analysis program called *Wordsmith Tools* (<http://www.lexically.net/wordsmith/>). The study confirmed the results of Yetes and others that observe similar levels of orality in the forum discussion posts, suggesting that online writing practice improves speaking ability; however, the corpus in this research yielded results that were partly similar but also somewhat different from those of [Piqué-Angordans et al.](#) The influence of the students' first language and possible confusion in the usage of the modality were noted as possible reasons for the differences.

A study by [Kol and Schcolnik \(2008\)](#) demands particular attention because the present research owed its use of *textalyser* (<http://textalyser.net/>) to this study. The study, aiming to establish valid assessment criteria for students' written contributions in forum discussions, was conducted in four English for Academic Purposes (EAP) courses ( $n = 156$ ). The discussions constituted 15% of the students' final grade, and two criteria, namely reflection and interaction, were chosen for assessing online contributions. Students were also interviewed. The study revealed students' positive attitudes toward the experiment; however, the forum text analysis conducted using the *textalyser* (which will be explained in more detail in the [research methods](#) section below) revealed that no significant improvement occurred from the first to the fourth (final) forum discussions, although 70% of the students perceived the forum as being helpful in improving their writing.

## 2.2. Blogs

Although positive expectations for the use of this new technology in language education were expressed early ([Campbell, 2004](#); [Pinkman, 2005](#)), it will likely take several more years before blogging becomes a stable component of quality teaching practices.

[Wu \(2006\)](#) in Taiwan reported on blog implementation for peer review and teacher feedback in a low-intermediate EFL composition class that was composed of adult university students ( $n = 39$ ). The course lasted for 18 weeks and combined course meetings with two peer-reviewed blog writing sessions. An analysis showed that the majority of the students were limited to encouragement and compliments in casual writing mode, even though all students were trained to carry out a peer review during the course. In this study, the teacher's feedback and Ferris' subjective rating scale, with values ranging from 0 to 6 points ([Ferris, 1997](#)), were applied to the two drafts submitted before and after the blog peer review. The results showed little progress in students' writing skills.

[Murray and Hourigan's \(2008\)](#) Irish study took a step toward articulating the special nature of a blog. The use of a blog was required in an academic writing class composed of students majoring in various modern languages ( $n = 42$ ). In their conceptualization, the blog environment serves two different kinds of activities, one expressive (creative and reflective) and the other socio-cognitive (critical and collective). The students reflected on their language learning process through blogs in the target language in which each student was majoring. Students were required to write a 3000-word essay in English to integrate the blog entries. Although they concluded that the use of a blog had a positive role in self-reflection, the roles of the two investigated activities were difficult to discern.

[Wang \(2009\)](#) tested blog-based electronic feedback (e-feedback) with EFL Taiwanese university students in Taiwan ( $n = 30$ ). The course consisted of a ten-week writing class and a four-week blogging project. For the latter, the blog system was used for pre-/post-essay writing and peer feedback. In their comments, the students were allowed either to identify themselves or to remain anonymous. The submissions were co-rated in terms of their linguistic function and accuracy and were evaluated statistically. As in studies of paper-based writing instruction ([Hyland, 2003](#); [Keh, 1990](#)), the students' attention tended to be "unbalanced," that is, focused more on the micro-level (lexical and grammatical) or on lower-order concerns (LOCs) and less on the macro-level (organization and content) or on higher-order concerns (HOCs).

### 2.3. Wikis

While still new in the field, a growing number of articles exist about the basic implementation of wiki systems in educational contexts.

A study by Lund (2008) in Norway claims uniqueness in its application of the activity theory (Jonassen and Rohrer-Murphy, 1999) in terms of the use of a wiki collaboration framework and the analysis of videotaped wiki production. The data were collected in high school EFL settings in 2005 and 2006 (students number = 31). MediaWiki was the chosen platform, and the wiki was used for a topical writing project in a pairwise-initiated teamwork activity. The study observed shifts in the students' perspectives regarding learning processes from more traditional individualism to collective knowledge construction and ownership. This led to the conclusion that a wiki can be a viable tool to support collective language skills.

Franco (2008) tested wikis for low-intermediate level EFL instruction with students in a private language school in Brazil ( $n = 18$ ). The data came from two sources: wiki submissions and responses to an online questionnaire containing eight multiple-choice questions. The wiki was used for peer correction, in a group setting. The results suggested positive perceptions of wiki activity, and the pre-/post-peer correction data indicated progress in language acquisition.

Mak and Coniam (2008) explored the use of wikis with year 7 (aged 11) English as a second language (ESL) students for collaborative authentic writing lasting for six weeks in a secondary school in Hong Kong ( $n = 24$ , among which the performance of four students was closely examined). PBwiki (<http://pbworks.com/>) was used as the platform; it supported by password protection to prevent unnecessary intrusion. The final products of the students were intended to be used for the school brochures to be distributed to their parents. Two research questions on the students' engagement in and effects on the finished product were examined qualitatively and quantitatively (amount of words, t-units, and error-free t-units) to determine the substantial increase in production and the higher coherence in their writings. However, the data size was not enough to confirm a higher accuracy in this study.

Most recently, Turgut (2009) reported the results of an analysis of a college preparatory writing course using PBwiki in Turkey ( $n = 77$ ). The wiki was used for peer editing and for commenting on essays. The data consisted of wiki submissions, weekly journal entries answering twelve open-ended questions, and semi-structured interviews. Interviews were conducted after the beginning, middle, and end phases of the wiki project. At the end of each phase, three students were interviewed for 30 min each ( $n = 9$ ). Unfortunately, the study failed to provide detailed data or describe the analysis methods used. Nonetheless, the following were observed: 1) improvement in the students' writing skills; 2) improvement in the students' sharing of ideas, critical feedback, and confidence; and 3) greater motivation to participate in the activities.

Finally, though it lies outside the field of language education, the study by Trentin (2008) is noteworthy in its attempt to create an evaluation framework for wiki collaboration. The study concisely reports that, when collaboration is involved, the volume of contributions and the progress of each participant are obscured. In his study involving 30 students were followed from 2005 to the time of the study, each student was assigned responsibility for an individual section and a group section of a final product on a wiki page. All students were expected to contribute both individually and collaboratively. The process became complicated because it required that a series of codifications and statistical evaluations be carried out on the different aspects of participation and contribution, thereby making the use of the evaluation process in daily teaching practice difficult. Nevertheless, this study brings attention to the challenges involved in assessment contexts.

### 2.4. Blogs and wikis

Few research studies have tested the simultaneous application of two or more online writing tools in a single course.

A study by Chen et al. (2005) in the US introduced the use of both blogs and wikis, referred to as the *Folio Thinking* approach, in an engineering course (outside the realm of language education). The open-source Tikiwiki (<http://info.tikiwiki.org/tiki-index.php>), which supports both blog and wiki formats, was chosen for e-portfolios and reflective writing. Students were interviewed concerning their evaluations of the system. It is not easy to grasp how the two



systems were used differently in the project from the examples in the paper. However, the study reported that based on the initial trial, the integration of both systems helped to increase the engagement of the students and enriched their learning.

In sum, though efforts have been made to find valid studies that have examined the use of forums for educational purposes, the methods and results vary widely, and it is not yet evident if forums support positive effects on students' learning outcomes. In addition, detailed research on blog and wiki use has only recently begun (Lamy and Hampel, 2007). Although many studies have identified positive changes in terms of students' perceptions of these online writing tools for language learning, the assessment strategies vary, and only a few show concrete data that suggest conclusive results. One concern is that transferring/imposing our method onto more traditional writing instruction scenarios – for example, peer review and process writing – may reversely limit the potential of the new writing tools. The book *Blended Learning*, by Sharma and Barrett (2007), introduces many novel ideas and provides a useful guide concerning how to use new digital tools specifically for language education. With a grounding in theoretical insights and the extant literature, the following research reports on an attempt to find the best way, or at least a better way, to use these new tools in our EFL teaching and learning facilities. In the book *Second Language Writing* by Hyland (2003), which provides a comprehensive review of the subject, the author notes that there remains significant uncertainty regarding how “networked communication actually leads to an improvement in written products” (p. 155). It is important to consider what we have accomplished in this matter since.

### 3. Research questions

Based on these considerations, three questions regarding the usage of forums, blogs, and wikis were targeted in our research. These are:

1. How do students perceive each of the three online tools?
2. Are they effective in helping the students acquire the target language?
3. If yes, in what way(s) can we quantify the resulting progress?

### 4. Methodology

#### 4.1. Participants

The research was conducted in the second semester, from October 2008 to January 2009, at a university in Tokyo. Three sections (hereafter termed Classes A, B, and C) of the same course, upper-intermediate level English, were included in the research. All students were in their sophomore year. A total of 23 participants from Class A, 18 from Class B, and 20 from Class C participated, for a grand total of 61 students.

#### 4.2. Blended course design

The three classes followed the same blended learning course design (Graham, 2006) of weekly face-to-face instruction and out-of-class online writing activities. There were 15 class meetings, each lasting for 90 min. The objective of the course was for students to improve their English skills in educational settings in four areas: reading, listening, speaking, and writing. *Lecture Ready 2* (Sarosy and Sherak, 2006), which includes a paper textbook, audio CD, and DVD lectures, was the course textbook. Twenty-five percent of the course design focuses on writing skills.

Following the characteristics of each tool reviewed above, forums, blogs, and wikis were introduced in such a way as to make the most of the advantages of each: forums were used for topical discussions (with each topic selected by the students from the textbook unit studied in the meeting sessions) among the class as a whole. Blogs were used for an optional free writing activity, while wikis were set up in order to conduct a collaborative translation from English to Japanese, with passages taken from the course textbook's “mini-reading” section. Students wrote in English for

forums and blogs; on the wikis, they translated from English into Japanese. One discussion topic and one wiki translation exercise were set up approximately once per week.

Throughout the course, the instructor did not participate in the online activities, but carefully observed what was happening in the system. The analysis took place after the course had ended in order to avoid influencing the natural development of the students' writing during the course.

Students in this research used "screen names" for the online activities throughout the course in order to keep their identities anonymous to their classmates and the teacher. Anonymity has proven effective in freeing Japanese students from their fear of making mistakes and in encouraging improved rates of productivity (Miyazoe, 2008, 2009).

#### 4.3. Information communications and technology (ICT) environments

The meeting sessions were held in a computer lab where one PC with an Internet connection was provided per student. Other computer labs were available on campus for all out-of-class activities. Responses to the introductory questionnaire distributed in April 2008 revealed that 90 percent of the students had a PC with Internet access at home.

The open-source Moodle (<http://moodle.org/>) was chosen as the forum platform for its ease of use. The students were allowed short practice sessions in class prior to the assignments whenever a new online tool was introduced. Given that the students in this study were at the developmental stage in their target language acquisition process, the class website was only accessible to members of the class. Forum and wiki activities were viewable by everyone in the class; however, the students were allowed to restrict access to their blogs if they so wished.

We note that the wiki was newly implemented in the Fall semester after the same students had tested the forum and blogs during the Spring in order to promote familiarity with the new technology. Although the wiki experience was new for the students in the study, we note that forums and blogs are commonly used tools. *Mixi* ([www.mixi.jp](http://www.mixi.jp)), a type of social networking service (SNS) that is popular among students, has given them experience in using these digital communication tools. In addition, unlike a decade ago, when technology was foreign to many people (Shetzer and Warschauer, 2000), basic computing skills are now standard after lessons were officially integrated into all high school curricula in 2005.

#### 4.4. Procedures

Three quantitative and qualitative methods — questionnaire (Appendix A), interview, and written assignments — were analyzed to provide a triangulated interpretation (Creswell and Plano Clark, 2007).

Printed questionnaires were distributed and collected in class on the final examination day to ensure the highest possible response rate. Eighteen volunteers, six students from each of the three classes, were interviewed. The interviews were held on the last day of the course, with the instructor acting as the interviewer. A semi-structured format was chosen with eight specific non-leading questions regarding the course and online activities, which had to be answered within 10 min so that the 90-min time limit was not exceeded. We analyzed only those written assignments that had been input into the system during the course, and we only conducted analyses with specific student consent.

The numerical responses to the questionnaire were analyzed quantitatively using the SPSS statistical software 16.0 package. To analyze the qualitative textual data from the students' interviews and online written assignments, two new analysis methods were used. The students' interview responses were transcribed and evaluated using internationally available text analysis software named PASW Text Analytics for Surveys, which was recently upgraded to include Japanese language analysis features. We relied on the grounded theory approach to generate a hypothesis from specifics via a series of coding processes (Glaser and Strauss, 1967; Strauss and Corbin, 1990; Charmaz, 2006). For online writing analyses, following the research methodology by Kol and Scholnik (2008), we used the text analysis web tool *textalyser* for the forum and blog posts of Class A, which had the greatest number of students ( $n = 24$ ). Further, forum and blog posts by the same group of students from Spring 2008 were used (Miyazoe, 2009) to compare changes in performance ratings from Spring to Fall.

## 5. Results

### 5.1. Quantitative data analysis

Based on the overall evaluation of the blended course, the mean rating given by the students was 4.29 ( $n = 52$ ,  $SD = .696$ ), with 90.4 percent recording a score of four or five on a five-point scale. The course, therefore, was well received by the students.

Responses to Question 1, which asked about students' perceptions of forums, blogs, and wikis in terms of liking, enjoyment, and usefulness, revealed that the students were most satisfied with wikis, followed by blogs and forums, for all three items. This tendency was the same for all three classes.

Answers to Question 2, which asked students to choose their favorite among forums, blogs, and wikis, showed that they liked wikis the most, followed by blogs and forums (Table 2 below). Their responses to Question 1 explain the reasons for this result.

Responses to Question 3, which asked about the relation between the student's own postings and reading others' postings, showed that those who read the postings under one of the activities also tended to post material themselves, and that this tendency was the same with the other two activities. This confirms the results in previous studies (Miyazoe, 2009) for forums and blogs. The current study, therefore, confirms that a similar relation between reading and posting may exist for wikis.

In response to Question 4, which was intended to clarify the level of utility that students associated with the wiki collaborative translation activity, the students rated the wiki activity in terms of mastering reading English, translating English, and fostering communication (Fig. 1 below). The percentages of students who gave moderately to very positive ratings of four or five on a five-point scale were 62.1 percent for reading, 74.2 percent for translation, and 17.5 percent for communication. Therefore, as intended, students found the wiki activity very useful for mastering translation skills. However, they also recognized its great utility for improving their *reading*, possibly due to the careful comparison between the original English text and Japanese translation that the activity demanded.

Table 2  
Students' ratings of their favorite activities (Q.2).

		Frequency	Percent	Valid percent	Cumulative percent
Valid	BBS	8	13.3	13.6	13.6
	Blog	18	30.0	30.5	44.1
	Wiki	33	55.0	55.9	100.0
	Total	59	98.3	100.0	
Missing	System	1	1.7		
Total	60	100.0			

### 5.2. Qualitative data analysis

The *textalyser* analysis was applied to students' forum and blog posts from the Spring and Fall semesters to test for possible changes in lexical density, syllables per word, words per sentence, and the Gunning-Fog Readability Index.

Lexical density, or the ratio of different words to the total number of words, indicated that the students' vocabulary became much richer over the course of two semesters in the blogs and slightly poorer in the forum posts. However, from Spring to Fall, both forum and blog posts featured a slightly higher level of vocabulary, more complex sentences, and an improved reading level: in all three cases, however, forum writing samples exhibited more extensive changes than did blogs. Therefore, except for word variation, the students' writing seems to have increased in complexity, in accordance with the course objective of improving students' English for educational use.

Fig. 2 below visualizes Gunning-Fog Index data, which can be roughly interpreted as ranging between 6 ("easy") and 20 ("hard") reading difficulty, using interpretations as provided on the *textalyser* site. Blue circles indicate forum and blog posts written in the Spring and transparent circles indicate those written in the Fall by the same student. In the Spring, a weaker difference between the two writing styles, stacking around the diagonal line, was apparent. However, in the Fall, those pink circles representing fall writings indicated a somewhat larger difference, moving to the upper left corner as a group, which suggests that students may have begun to acquire some level of differentiation in their writing styles between forum and blog postings.



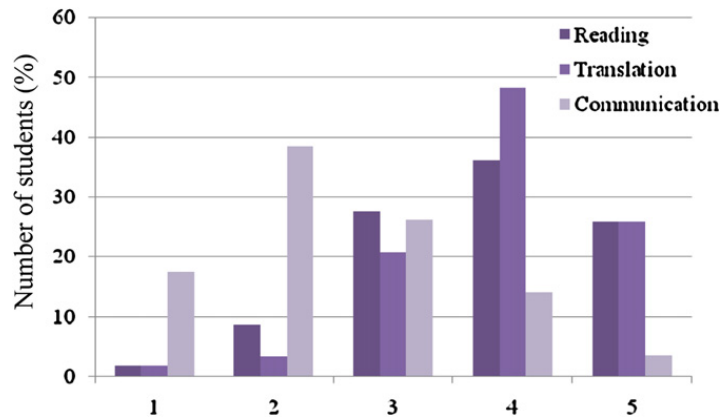


Fig. 1. Perceived Usefulness of wiki for learning tasks (1=not useful, 5=useful).

Interview questions regarding the students' perceptions of 1) the blended learning course design; 2) forum discussions; 3) blogs; and 4) wikis were analyzed using the text analysis software. In Figs. 3–6, the sizes of circles represent the number of students who mentioned the concepts in their responses, and the weights of lines linking the concept nodes represent the number of students who exhibited associations between the concepts in their responses; for example, if a student used the terms “online” and “fun” in the response to a single question, these two concepts are considered to be connected and are linked by a line.

Fig. 3 below shows the concept network for blended learning. The students in this study seem to have formed positive feelings (e.g., novel, easy, fun) about the online components, resulting in positive overall course evaluations. The concept of “understanding” or one similar to this concept was noted by five students. The blended design seems to have created a supportive learning environment within the course.

Fig. 4 below shows the concept network for forum discussions. It illustrates that the students formed a strong association between forum activities with the acts of “thinking,” “having opinions,” and having to “write” material that would then be read by their peers. Their feelings regarding this aspect of forum use were divided between more positive (“good” and “like”) and more negative (“troublesome” and “hate”). The students found the tasks that demanded formation and expression of their views in written English both challenging and useful. One point of note is that they formed a strong association with the agency concept of “myself” to be able to form opinions, which is unexpected but quite understandable because, unlike English, their first language (Japanese) requires that one must not express one's ego in thoughts or interactions.

Fig. 5 below shows a concept network for students' perceptions of blog writing. Though the content of blogs may vary, a strong association was formed between the concepts of “myself,” “write,” and “blog,” indicating that many of

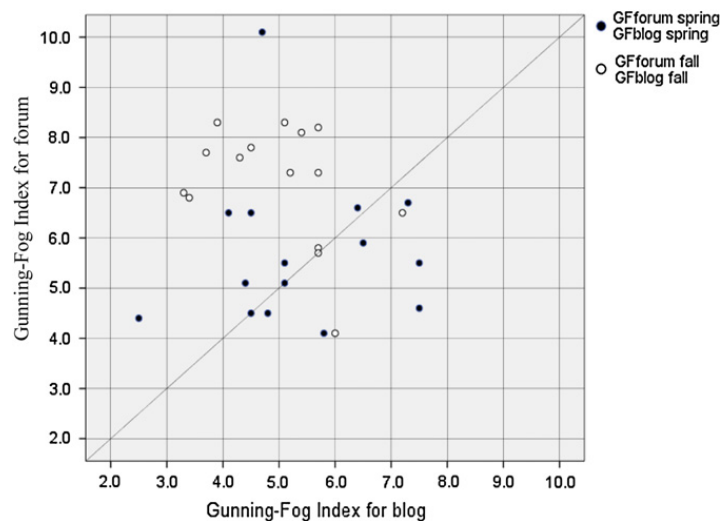


Fig. 2. Readability of students' forum and blog postings. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

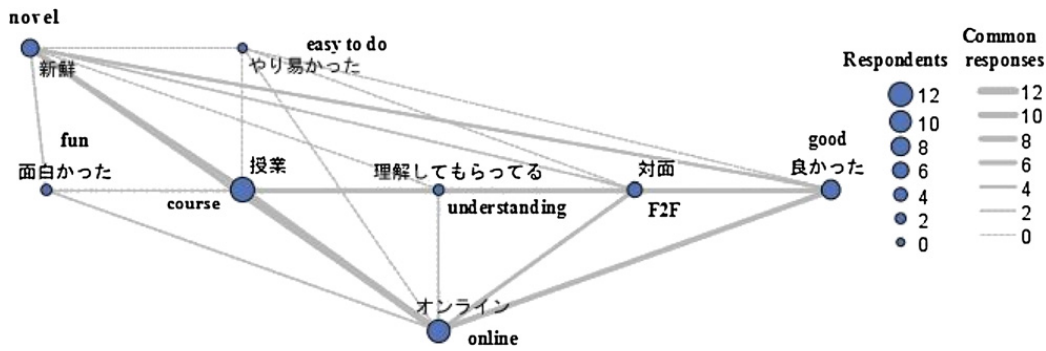


Fig. 3. Category network for blended learning.

the students defined the blogging experience as a personal English exercise that involved writing about themselves. In addition, with blogs, they seemed to enjoy the freedom to write whatever they liked. Perhaps since blogging was optional, negative impressions about blogs were not formed and therefore did not feature in the analysis.

Finally, Fig. 6 shows the concept network for the wiki. Strong associations between “translation,” useful,” “wiki,” and “fun” were apparent, indicating that wiki collaboration was useful for translating words from English to Japanese. However, although the wiki was well received by the students in this study, the students also noted a certain level of “difficulty” in its use. Nevertheless, this did not seem to discourage them from participating.

### 6. Discussion

This study aimed to clarify students’ perceptions of three asynchronous online writing tools, namely forums, blogs, and wikis, and to quantify any progress the students may have made through their use. A particular effort was made to use all three media simultaneously in order to simulate real-world usage of these tools. The study clarified the utility the students found in each of the online writing tools and observed general success in making qualitative changes in students’ writing abilities. However, several issues arose that need to be considered for future research.

Although commenting on other students’ blogs was allowed, students in this study did not comment on one another’s blog postings. One possible reason for this is that there was so much interaction planned and expected in forum and wiki activities, and blogs were optional; thus, students may have treated blogs as private zones. However, many of the students said they did read others’ blogs. The results of this research may therefore have been different had the focus been on the interactive quality of blogs (Richardson, 2006).

The application of *textalyser* to examine qualitative change in language learners’ written submissions suggests one direction that the field could take. There should be room to argue the utility and validity of using the Gunning-Fog Index readability test (Weigle, 2002; Wolfe-Quintero et al., 1998), all the more so because the linguistic corpus analyzed in this study was produced by non-native speakers/writers who were at the developmental stage of acquiring the language. If online written materials share similar features to speech, as was acknowledged by Montero et al. (2007) and others, the next step in EFL should be to allow such “writing speech” (Crystal, 2001, p. 25) to be differentiated into the spoken and the written. The results from this study show that this, if sophisticated and

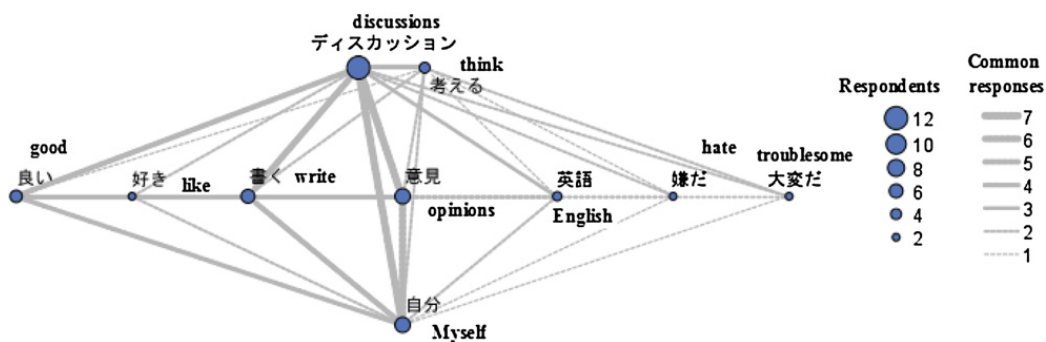


Fig. 4. Category network for forum discussions.

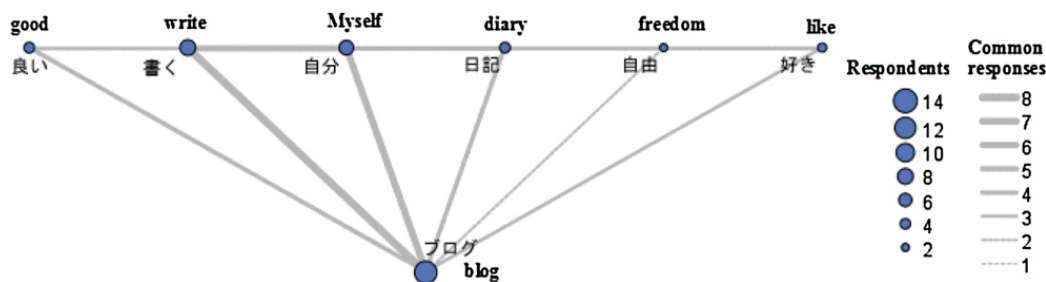


Fig. 5. Category network for blogging.

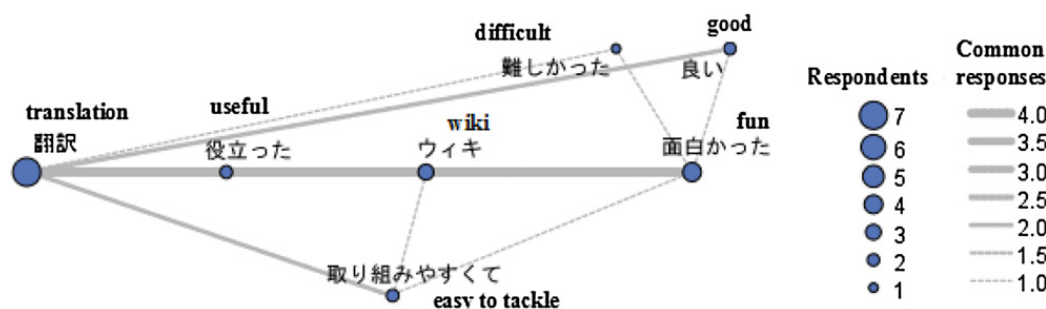


Fig. 6. Concept network for the wiki.

appropriate, can become a powerful tool to quantifiably examine learning outcomes with a level of objectivity that has been out of reach thus far in the field.

One of the difficulties that has yet to be addressed concerns assessment issues in collaborative learning, namely how we evaluate the process and the final products of collaborative works such as wiki production. The process of weighing several assessment methods as employed in the current research indicates that, in order to evaluate collaborative artifacts, at least three elements should be considered: 1) achievement as a group process in contrast to work of other groups; 2) the individual's share in the group's achievement; and 3) achievement of the individual before and after the group work. With this in mind, it would be possible to produce a collaboration assessment matrix and test it in a future study.

At the time of this writing, no examples were available that used wikis as a collaborative translation tool from learners' target language to their first language in order to foster target language acquisition, as tested in this research. This has particular merit in introducing the wiki system, with its full collaborative potential. Any learner can take advantage of a wiki, regardless of his or her proficiency in terms of acquisition of the target language. In future studies, researchers may experiment with the use of the system in intercultural collaboration, where Japanese students who are studying English edit the translation from an original text sample written in English by students learning Japanese in China, Taiwan, Korea, and Singapore. In this way, we could create an egalitarian collaboration learning sphere in an international exchange context, as has been suggested in the study by [Belz \(2002\)](#) and by others in the field.

Finally, though this research did not find any significant contradictions in terms of learning outcomes among the three classes following the same course design and activities, completely opposite reactions, namely positive and negative, to the same stimulus of wiki implementation ([Elfving and Menchen-Trevino, 2008](#)) were apparent. In this sense, it is too early to conclude, based only on the positive results of the current research, that online writing tools will always bear fruit in education.

## 7. Conclusion

The study claims its originality in its application of three different online writing tools in an EFL context and suggests a positive effect on students' language learning progress. Though much remains for future research, we feel that this study takes a step forward in terms of how to think of online writing and its effectiveness in our language teaching and learning strategies. The fact that our results to date support its usefulness is quite encouraging.

**Appendix A. Questionnaire (literally translated version from Japanese)**

2008 Fall end-of-semester questionnaire

Anonymous

Note: Only the question items for which results are reported in the current research paper are reproduced. The spaces provided to answer open-ended questions etc. are not reproduced.

There are about 70 questions in total, and the majority of them ask you to just circle an item. It will take about 15 minutes of your time. Your answers will not affect your final grade in this course.

For better statistical validity, when the questions ask you to circle an item, please answer as many questions as possible (missing items can lower the validity). The open-ended questions are optional. Thank you for your time.

\*\*\*\*\*

These are questions about yourself. Please circle the item or fill in the appropriate number.

Gender	Male	Female
Age	years old ( in whole numbers )	
Academic year	year	
Mother tongue (e.g., Japanese)		
Cultural identity (e.g., Japanese)		
PC use ( approximate indication )	For years ( in whole numbers )	
Studying English ( approximate indication )	For years (in whole numbers)	

For classes meeting in the Fall (October 2008 to January 2009),

I rarely attended.      1—2—3—4—5      I mostly attended.  
 (*three* indicates attending approximately 7 of the 14 class meetings.)

\*\*\*\*\*

Below are questions about the BBS (Bulletin Board System) forum discussions, blogs, and wikis that were introduced in the practical English II course.

Q.1 Evaluate BBS discussions, blogs, and wikis on the following five-point scales.

BBS discussions

Dislike 1—2—3—4—5 Like  
 Boring 1—2—3—4—5 Enjoyable  
 Not useful 1—2—3—4—5 Useful

Blogs

Dislike 1—2—3—4—5 Like  
 Boring 1—2—3—4—5 Enjoyable  
 Not useful 1—2—3—4—5 Useful

Wikis

Dislike 1—2—3—4—5 Like  
 Boring 1—2—3—4—5 Enjoyable  
 Not useful 1—2—3—4—5 Useful

Q.2 Of the BBS discussions, blogs, and wikis, which activities do you like most? Rank them using the numbers 1 (like most) -- 3 (like least).

Example:

BBS discussions	1
Blogs	2
Wikis	3

**Your answer:**

BBS discussions	
Blogs	
Wikis	

Q.3 Tell me about your participation in BBS discussions, blogs, and wikis, respectively.

BBS discussions

Rarely posted 1—2—3—4—5 Frequently posted  
 Rarely read 1—2—3—4—5 Frequently read

Blogs

Rarely posted 1—2—3—4—5 Frequently posted  
 Rarely read 1—2—3—4—5 Frequently read

Wikis

Rarely posted 1—2—3—4—5 Frequently posted  
 Rarely read 1—2—3—4—5 Frequently read

Please provide any additional information to explain your participation.

Q.4 This question is about collaborative translation activities using wikis.

For you, wikis are:

Not useful 1—2—3—4—5 Useful for reading English.  
 Not useful 1—2—3—4—5 Useful for translating from English to Japanese.  
 Not useful 1—2—3—4—5 Useful for communicating with classmates.



Do you have any other comments about the wiki?

\*\*\*\*\*

Regarding BBS discussions, blogs, and wikis, if you have any ideas for how to better use them for English learning, please write them here.

\*\*\*\*\*

**Important:** As a whole, the Practical English II course taught by Author was:

Not good. 1—2—3—4—5 Good.

\*\*\*\*\*

Please comment on how we could further improve the course, LMS- based blended course design (that is, the inclusion of Moodle), or the management of Practical English II.

\*\*\*\*\*

The results of this questionnaire might be published at conferences and/or in academic journals. In such cases, only the statistical data or the parts of your answers in open-ended questions will be published, and there will be no way that the readers and/or the audience could determine your identity.

If you do not provide your consent on the following form, the results of this survey will be used only for course improvements. Your agreeing or disagreeing to this consent request will never have any effect on your final grade.

<p>I hereby</p> <p>agree                      disagree</p> <p>(circle one)</p> <p>that my answers may be used as part of the data and published.</p>
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Your responses will be valuable for improving my future course management. Thank you for your cooperation.

Person in charge: Terumi Miyazoe

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