

# Designing an Effective Blended Learning Course Based on Previous Research Findings

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The present study reports on an attempt to incorporate e-learning into remedial English class at a Japanese technological university with the application of previous research findings. Eight suggestions regarding the effective use of e-learning were derived from six previous research papers. A blended learning class was designed based on the suggestions and implemented for one academic year. To evaluate the effectiveness of this method, a questionnaire survey was conducted at the end of the first semester, and the same English test was administered at the beginning of the first and second academic years in order to see if students had made any academic improvement. Most of the 23 participants, who were placed in a lower level English class, thought that e-learning helped them study out of class regularly and gain a better understanding of what they had learned in class. The results of pre- and post-tests showed a statistically significant improvement. Overall, this blended learning approach produced positive results.

Key words: blended learning, e-learning, remedial

## 1. Introduction

As the use of Information and Communication Technology (ICT) has become common in everyday life in the last decade, educators are encouraged to utilize ICT in their classes. Under these current circumstances, more and more educational institutions incorporate e-learning into their curricula. This trend is based on the assumption that e-learning facilitates students' studying by meeting each student's academic level and allowing him/her to study at his/her own pace (Goda & Okuda, 2009<sup>[1]</sup>; Takaoka, 2012<sup>[2]</sup>). Introducing e-learning itself, however, does not necessarily promote the active use of e-learning among students (Sakai & Ono, 2005<sup>[3]</sup>; Sakai, 2008<sup>[4]</sup>; Ota, 2012<sup>[5]</sup>). In fact, e-learning can decrease students' motivation to study. For instance, after interviewing three college students in Germany who had chosen to stop attending computer-assisted French and/or Spanish classes, Stracke (2007)<sup>[6]</sup> found that the major reasons behind this were (a) lack of support from teachers, (b) lack of printed materials, (c) inability to see how computer-assisted learning could relate to a face-to-face class, and (d) rejection of learning with a computer. Other shortcomings of e-learning include the financial burden of setting up and managing an e-learning system (Takaoka, 2012). Since students' attitude toward ICT and the success/failure of the class depend on how ICT is implemented (Sagarra & Zapata, 2008<sup>[7]</sup>), it is

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critical to understand effective ways to incorporate e-learning into curricula.

## 2. Literature Review

There have been many papers that have reported on the utilization of e-learning in college English courses in Japan. However, some of these practical reports are difficult to draw on due to an extremely short period of practice, such as 2-3 weeks, or the use of e-learning materials specifically tailored by the teachers for what was taught in class. Since the present study aims to examine effective ways to utilize e-learning in college English classes, it is necessary to take into consideration the kind of e-learning material used, the duration of its use, instructional procedure, and the results of the practice. Therefore, six previous studies were selected based on the following criteria: (a) the use of commercially available e-learning materials (such as ALC Net Academy or Newton TOEIC TLT Soft), (b) the practice of e-learning for at least one semester, and (c) detailed descriptions regarding how e-learning was implemented in class, how students reacted to e-learning, and what kind of suggestions could be made for improvement.

Goda and Okuda (2009) reported a carefully planned semester-long remedial English course. This course used a blended learning approach, which consisted of a face-to-face class and an out-of-class e-learning activity, with the application of a self-regulated learning cycle by Shunk and Zimmerman (1998)<sup>[8]</sup>. The semester was divided into three terms, and three courses were prepared based on each student's achievement goal. The students used a "Study Record Sheet" in order to monitor their learning, and they were provided with various kinds of academic support. Upon successfully finishing their course requirements, the students were rewarded with a "o" stamp. Getting less than 12 "o" stamps led to failure to receive credits for the course. If an "x" stamp was received, the student had to attend a supplemental lesson. Approximately 96% of the 818 students in the course completed this e-learning program, and their test scores were better than those of the students who had attended a different kind of remedial English course in the previous year. This practice showed that this blended learning method helped the students build study habits and improve their English.

In practices by Takashima (2006)<sup>[9]</sup> and Sannomiya-Ikegami, Furuya, Irisawa, and Kayashima (2014)<sup>[10]</sup>, e-learning was used as an out-of-class assignment. The instructors set goals and deadlines, and the students were expected to record their progress on a learning portfolio which they submitted to their teacher on a regular basis. Takashima observed that students using e-learning performed better on the TOEIC Test than those who had studied without it. After three years of implementation, Sannomiya et. al. found that the effect of this practice on the students' academic achievement varied depending on their proficiency level and the academic year. Takashima emphasizes the necessity of giving a quiz in order to encourage students to study thoroughly. Sannomiya et.al. suggest that it is crucial to (a) determine ways to encourage students to actively study with a computer, (b) provide students with opportunities to feel an improvement

in their English, (c) help students recognize the merits as well as demerits of e-learning, and (d) make sure to give support and encouragement so that students can continue to work on all the assignments and feel a sense of accomplishment. They also mention that using e-learning as a tool for preparing for and reviewing what is taught in a face-to-face class would be more effective than replacing conventional classes with e-learning.

A different type of blended learning method was reported by Ota (2012): the first 20 minutes of class was spent on face-to-face reading instruction with handouts, and the rest of class time was used for e-learning activities. The teachers set achievement goals for e-learning activities each week so that each student could not only see his/her own progress but also compare it to that of the other students. After four months of practice, the students' test scores showed a statistically significant improvement. She concluded that a teacher plays an important role in keeping students motivated because e-learning tends to lack a human element and, therefore, combining e-learning with a face-to-face class can be an effective way to encourage students to remain engaged in e-learning.

Miyake, Owaku, Komiyama, Seki, and Tsushima (2010)<sup>[11]</sup> reported on their years of effort to successfully use e-learning in a required e-learning course. This course required students to work on a certain number of e-learning units in and outside class in order to improve their basic English. One of the authors' challenges was to deal with many students who raised concerns regarding the effectiveness of computer-assisted learning, which eventually led to the instructors incorporating a face-to-face instruction along with printed materials. The authors conclude that it is not effective to rely solely on e-learning for motivating students to learn and improve their English.

A report by Yokomura-Uki (2010)<sup>[12]</sup> described two years of two e-learning TOEIC classes with different e-learning materials and instructions. With a pedagogical experience she had gained in the first year of practice, she established a clear framework in the second year: distributing and checking an attendance sheet on which students recorded not only their class attendance but also their academic progress; making comments on students' progress on the sheet; setting the number of e-learning assignments that the students were expected to complete per month; and giving a short test in the middle of the semester. She highlighted the significance of evaluating class attendance and the number of assignments completed because of the high possibility that students would fail to study on a regular basis if they were not monitored. She also emphasized the importance of (a) using e-learning as a way to review what each student did not understand in a traditional face-to-face class and (b) giving tests or quizzes regularly in order for students to recognize how much they understood what they had learned.

The eight following suggestions can be derived from these previous studies in terms of how to effectively implement e-learning in a college English course:

1. *Connecting e-learning to a face-to-face class*

In order to motivate students to study with a computer, it is necessary to help them understand how e-learning can benefit their academic performance. Since a regular face-to-face class usually has a big influence on students' learning, e-learning can most effectively enhance learning when it is related to what is taught in a class. Additionally, a blended learning format seems to give students a clear understanding of instructions and what they are expected to do (Lim, Morris, and Kupritz, 2007<sup>[13]</sup>).

2. *Requiring the use of e-learning*

As pointed out by Sakai and Ono (2005) and Sakai (2008), it is not realistic to expect that students would be actively and autonomously engaged in computer-assisted learning once it is introduced. Instructors need to create a syllabus which requires students to utilize e-learning.

3. *Setting achievement goals*

It is helpful for teachers to set achievement goals in order to make it easier for students to monitor their learning. Since academically struggling students have not established study habits with academic goals in mind (Ono, 2008<sup>[14]</sup>), it could be very difficult for them to gauge how much they want/need to achieve. By setting academic goals for them, teachers can encourage students to learn how to study to reach these goals.

4. *Optimally utilizing printed materials*

Even though young generations are now considered to be “digital natives”, many students are still most familiar with studying with pencil and paper. A lack of printed materials makes it difficult for students to review what they have studied online. Therefore, they tend to think that e-learning does not give them the sense of academic accomplishment they expect and, consequently, they are suspicious of its effectiveness. Hence, it is important to utilize printed materials appropriately to make students feel more comfortable studying with a computer.

5. *Introducing reflection activities*

Self-reflection is significant for helping students not only to recognize their own understanding of study content but also to make study plans and select methods of study. Teachers need to make sure that students reflect on their own learning processes and learn from them.

6. *Helping students to experience a sense of accomplishment*

It is necessary for students to gain a sense of accomplishment in order to improve their academic motivation. However, just letting them work on e-learning is not sufficient. One of the important jobs for teachers is to acknowledge students' academic effort and give them positive feedback.

7. *Giving quizzes on a regular basis*

Students need to check their understanding of lesson content frequently so that they can achieve better learning results. Therefore, it is important to give students regular opportunities to measure their achievement.

### 8. *Providing frequent academic support*

Ono (2008) states that instruction and support from teachers are crucial elements for the effective use of e-learning. In other words, the human aspect is one of the most influential factors in determining its successful implementation. Teachers should not miss any opportunity to provide academic help to their students.

## 3. Method

### 3.1 Purpose of This Study

It is important to put these research findings into practice in order to organize better blended learning classes. Although more studies on incorporating e-learning into Japanese English education are available due to the current increasing interests in ICT education, little research has focused on a class designed on the basis of implementing what previous studies have revealed about the effective use of e-learning. The present study aims to investigate how findings of previous studies regarding e-learning can be applied to a remedial English course in a Japanese technological university and how it can influence students' academic achievement and their perception toward e-learning.

### 3.2 Participants

Thirty first-year undergraduates majoring in Engineering were placed in two lower level English classes taught by the author based on the results of their placement test (there were 14 students in Class A and 16 in Class B). Classes A and B met twice a week (for a total of 30 classes per semester) and used the same teaching materials and methods. Twenty-seven students attended two consecutive required English courses, "English I" in the first semester and "English II" in the second semester. Among them, 23 students (18 males and 5 females) received credits for both courses. The data for the 23 students who met the course expectations were analyzed for this study.

### 3.3 E-learning Material

The e-learning material "Surala", developed by SuRaLa Net Corporation, was introduced into required English classes in late April, 2016 for the purpose of encouraging students to spend more time studying outside of class and deepening their understanding of English grammar. The lower level classes utilized e-learning material on a par with the third grade of the Eiken Test in Practical English Proficiency. The material consisted of grammar units with three subsections (Lecture, Drill, and Quiz), which provided students with opportunities to learn English grammar at their own pace and reflect on their understanding. This e-learning system's "teacher management site" enables teachers to set assignments on each student's personal page and check his/her progress. Since the institution had distributed iPad Minis to the students at the beginning of the academic year, it was possible for them to use their devices to access the e-learning system at

anytime outside the classroom. If a student did not feel comfortable studying with the iPad Mini, he/she could also use a computer.

### 3.4 Implementation of Blended Learning

Based on the findings of previous studies, a blended learning method was implemented for the lower level English classes as follows:

#### **Classroom instruction**

The students spent about 30-35 minutes in each class reviewing grammar with the teacher's explanation and working on grammar exercises that the teacher had prepared. A handout was used for this activity. After the review was finished, approximately 25-30 minutes was spent on reading comprehension with a textbook. At the end of a class, the students were given their Review Sheet and an e-learning homework assignment, which allowed them to practice what they had learned in the class (Suggestions 1 and 2). The next class started with a grammar quiz which was intended to check the students' understanding of the previous class content (Suggestion 7). The quiz was created by the instructor and did not use any of the problems from the e-learning material. After the quiz was collected, the students checked the correct answers for the previous quiz that had already been graded by their instructor. Students who got a score of more than 70% on each quiz would pass. Two failed quizzes led to one supplementary lesson after class in order to make sure that academically struggling students would get the academic support they needed (Suggestion 8).

#### **E-learning homework assignment**

Each e-learning assignment usually consisted of drills covering two grammar units that the students had learned during class and a quiz combining the two units (with approximately 8-10 problems per Quiz). The instructor assigned which units to study so that the students had a clear idea of what they were supposed to work on (Suggestion 3). Although viewing a video lecture was not required, it was encouraged for students who wanted to review the grammar items. The Review Sheet was used for this assignment to encourage students to reflect on their understanding (Suggestions 4 and 5). After finishing a drill for each unit, the students were asked to rate on a Review Sheet how well they thought they did on the exercise. Then, they were asked to complete a quiz in order to check their understanding. After finishing the quiz, they were required to record their number of correct answers on the review sheet. If they had given any incorrect answers, they needed to check the correct answers, explain in their own words why they had made each mistake, and outline their thought processes leading to the correct answer. Upon completing the whole assignment, the students rated their overall understanding on the Review Sheet by checking "mostly understood", "relatively understood", "not quite understood", or "hardly understood". The Review Sheets were collected at the beginning of the next class, and the teacher checked the sheets after class. If a student did not have a sufficient explanation for his/her grammatical mistake on the sheet, he/she was asked to rewrite and resubmit it. In those cases, the instructor gave a brief hint on what was missing so that the student understood what was expected. If a student completed a whole

assignment successfully, the instructor put a stamp on their Review Sheet as recognition (Suggestion 6).

Twenty-one assignments were given during each semester. If a student had not finished his/her assignments consecutively, the instructor encouraged him/her to work on the e-learning material on a regular basis (Suggestion 8).

#### **Private supplementary lesson**

For the purpose of improving their understanding of English, the students were required to attend one private supplementary lesson whenever they failed two quizzes. In the lesson, students reviewed the grammar points from the failed quizzes. One handout per quiz was prepared by the instructor. Each lesson lasted from approximately 30 minutes to one hour, depending on a student's English proficiency level.

### **3.5 Procedures**

In order to gauge the effect of this blended learning method on the students' academic progress, the same multiple choice test was conducted twice: the first time it was given in early April, 2016, and the second time it was given in early April, 2017. The test consisted of 50 problems, and was created by English teachers at the institution. The results of the pre- and post-tests were compared for the analysis.

Regarding the students' perceptions of the effectiveness of e-learning, a questionnaire was administered at the end of the first semester. The students were asked to answer the question, "Do you think that 'Surala' was effective for improving your English, especially grammar?" by checking "Strongly agree", "Somewhat agree", "Not sure", "Somewhat disagree", or "Strongly disagree". They were also asked to give a reason for their answer in their own words.

## **4. Results and Discussion**

### **4.1 Results of Practice**

#### **4.1.1 Average number of successfully completed e-learning assignments**

In the present study, successful assignment completion means not only finishing assigned e-learning units but also submitting a Review Sheet which has been filled out satisfactorily. Out of 21 assignments given per semester, the average number of completed assignments was 18.9 (90.0%) in the first semester and 20.0 (95.2%) in the second semester. Considering the fact that the majority of the participants had entered college without having established regular study habits, e-learning assignments were successful in helping most of the students study consistently over the academic year.

#### **4.1.2 Average passing rate of quizzes**

The students were expected to pass each quiz, which was conducted at the beginning of every class, by achieving a minimum score of 70% or higher. The average passing rate was 54.3%

for 23 quizzes in the first semester and 58.2% for 22 in the second semester. The data indicate that it was not necessarily easy for the students to pass the quizzes even though they consisted of basic grammar problems.

#### 4.1.3 Number of students who completed all the supplementary lessons

The students were required to take one supplementary lesson if they failed two quizzes. Therefore, the number of necessary supplementary lessons varied among the students, depending on how many quizzes they did not pass. In the first semester, all 23 participants had to attend at least one supplementary lesson. Twenty-one students among them attended all the lessons that they were expected to. In the second semester, 21 students were required to attend supplementary lessons, 18 of whom successfully completed all of them. The overall percentages of supplementary lessons that were completed in each semester were 94.5% and 95.1% respectively. Despite some students occasionally forgetting to attend their lessons, most of the lessons were carried out without any problems.

#### 4.2 Results of Test Scores

Table 1 illustrates the effect of this blended learning approach on the students' academic achievement. The Wilcoxon signed-ranks test was conducted in order to identify a statistically significant difference in students' performance on the pre- and post-tests. The result shows that a significant improvement was observed with a large effect size ( $p = .0014$ ,  $r = .67$ ), which indicates that this blended learning course had a positive effect on improving the students' English.

Table 1 *Descriptive Statistics of Pre- and Post-Test Data*

	<i>M</i>	<i>SD</i>	<i>z</i>	<i>p</i>	<i>r</i>
Pre-test	36.5	6.3	3.20	.0014**	.67
Post-test	47.7	14.9			

\*\*  $p < .01$

#### 4.3 Students' Perception of E-learning Effectiveness

Table 2 shows how effective the students thought e-learning was for improving their English grammar. The majority of the students agreed that working on e-learning assignments made it possible to deepen their understanding of English, especially grammar.

Table 2 *Students' Perception of E-learning Effectiveness on Understanding English Grammar: "Do you think that "Surala" was effective for improving your English, especially grammar?"*

Strongly agree	Somewhat agree	Not sure	Somewhat disagree	Strongly disagree
7 (30.4%)	14 (60.9%)	1 (4.3%)	1 (4.3%)	0

Note.  $n=23$

Regarding the reasons for their responses toward the effectiveness of e-learning, 7 of the 21 students who considered e-learning effective stated that e-learning provided them with a good opportunity to review what they had learned in class. Four of them believed that repeated practice fostered their understanding of English grammar. Another four students found that it was easy to understand grammar explanations shown in the e-learning format. Three students acknowledged a positive impact on their better understanding in the next class or their improved performance on tests. One student, who answered “Not sure”, was not certain about e-learning’s effectiveness probably due to the lack of satisfactory academic results. The student who answered “somewhat disagree” mentioned that it was stressful to try to complete the assignments on a regular basis.

Overall, most of the students recognized a positive influence on their understanding of English grammar. Moreover, many students appreciated the opportunity to review what had been taught during class at a later time. Since most of the participants in this study had spent very little time reviewing class content before entering college, these data suggest that e-learning can be a very useful tool for helping those students develop regular study habits and a sense of capability in mastering English.

## 5. Conclusion

The present study reported an attempt to design an effective blended learning course based on eight suggestions derived from the findings of previous research. Most of the participants in this study considered e-learning to be an effective tool for improving their English because it allowed them to review what was taught in class on a regular basis. Considering the fact that they had hardly studied outside of class before entering college, it might have been their first time to recognize the importance and effectiveness of studying regularly outside of class for their academic improvement. This awareness could foster autonomous learning and improve their self-efficacy in studying English. Moreover, the year-long implementation of the course resulted in a statistically significant improvement in the students’ test performance. These results indicate that this blended learning approach had a positive effect on academically struggling students.

Although the results of this study were positive, there are some limitations to be addressed. First, the number of participants was quite small and in order to make a generalization based on the result, more participants would be necessary. Secondly, the validity and reliability of the English test used in this study might not be sufficient. Therefore, future studies should utilize commonly available English tests such as the TOEIC Bridge or the Eiken Test in Practical English Proficiency. Further research is needed to address these limitations.

## Note

This paper is based on the author’s presentation given at the JADE 13<sup>th</sup> National Conference

on August 22<sup>nd</sup> at Nippon Bunri University.

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