

Research Report

Free Writing in Medical ESP

-Exploring Issues of Research Methods for Intact Classroom Research-

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1. Introduction

Free writing as an instructional technique has been promoted for the improvement of students' writing fluency abilities in the classroom, such as a potential part of Nation's (2007, 2014) four strands of language learning or as a complementary output component to the primarily input-based extensive reading curriculum (Hafiz & Tudor, 1989). While a number of investigations have explored potential gains in fluency through the use of this pedagogic technique (see, for example, Blanton, 1987; Reichelt, 2001), the effectiveness of free writing in improving students' writing speed remains unclear. For example, in a recent investigation, Muller (2014) describes how in one intact Japanese high school class, English free writing clearly led to significant improvements in writing speed, while in another Japanese high school class students demonstrated no significant increase in their writing speed after a year of practice. This paper intends to add to the currently underdeveloped research base into free writing by describing the results of application of the pedagogic method in two medical science English courses at the university level in Japan. The next section briefly summarizes the literature underpinning the use of free writing for developing students' written fluency and outlines some contextual information regarding English language learning in Japanese classrooms. This is followed by a description of the research and pedagogic methods used for this investigation. Results indicate that when using the most convenient measure of writing fluency, word count, no significant difference was found between the beginning and end of the year in writing speed in either class. Student reactions to free writing and their lack of increased writing speed are discussed, and the overall positive evaluation of free writing by the students is considered in relation to the results obtained. One salient student observation is that the final free writing exercise came just before the students' final exams in other subjects, and so Ushioda's (1996; see also Dörnyei, 2001) concept of motivation varying throughout a course may have influenced the results of this investigation. More sensitive measures of writing fluency which may be more effective at determining changes to students' writing through the practice of free writing in the language classroom are considered in the discussion section. It is important to note that while this paper does not demonstrate statistically significant results, the need for dissemination and publication of such non-significant results in research is a growing theme in the academic publication literature (see, for example, Csada, James, & Espie, 1996), and it is with this concern in mind that these results are presented and described here.

2. Literature review: Free writing in the English as a Foreign Language Classroom

The literature on second language (L2) learning applications of free writing suggests that it can improve writing

speed (Fellner and Apple, 2006; Muller, 2014). Both of these studies, in addition to Bonzo (2008), are discussed in more detail below.

Bonzo (2008), researching German as an L2, found that free writing over the course of a semester of practice led to increases in student writing complexity, although he used a measure of complexity specific to German and therefore it is not easily transferrable to English. He reported no significant increases in student fluency, although rather than using word count as a measure of fluency, he used the type:token ratio (Bonzo, 2008), which is more commonly considered a measure of lexical variation than fluency (see, for example, Kuiken & Vedder, 2008), and so his findings are therefore not necessarily conclusive. Unfortunately, Bonzo (2008) does not report word count for the free writing in his investigation. His research, however, was primarily concerned with the influence of topic selection on student production, about which he concludes that not setting a topic for free writing is preferable to the teacher selecting a topic (Bonzo, 2008).

Fellner and Apple (2006) examined how Japanese students' writing speeds improved during a six-week class writing 'blog entries' for seven twenty-minute sessions. They found that their students nearly quadrupled their rate of writing, from an average of approximately 32 words per entry in the first week to about 122 words per entry during the seventh week of the program (Fellner & Apple, 2006, p. 20). As their research involved students typing on computers to compose their texts, they note as a caveat to their findings that it wasn't clear whether this represented an improvement in their students' English writing fluency or whether this was due to their students becoming more familiar with and therefore faster at typing English on a keyboard (Fellner & Apple, 2006). Despite this, the gains recorded in their research are quite encouraging for teachers considering whether to implement free writing practice in their own classrooms.

Also in Japan, Muller (2014) investigated the application of free writing at two schools, a private and a national public high school in Japan. His research included one control group for the national public high school, but no control group for the private high school students. He found that the only statistically significant gains in writing speed as measured by total words written in ten minutes were among the private high school students, while the national public high school students' control group reported a statistically significant decrease in total words written, and the experimental group, who had been practicing free writing for a full academic year, reported no significant change in overall writing speed. Muller (2014) outlines several methodological problems with his investigation, including the fact that in the case of the national high school students, students practiced writing for five minutes during class, but the data collection writing times were ten minutes long, while in the private high school, the writing times for practice and data collection were both ten minutes. Additionally, in the first instance of free writing in the national public high school, free writing was modeled by the teacher, while in the final instance, no model was provided (Muller, 2014). In light of earlier findings that suggest providing a model of free writing increases student writing speed (Way, Joiner, & Seaman, 2000), Muller (2014) speculates this may account for the inconclusive results in his investigation. He also notes that the success of free writing in one context and its lack of success in another illustrates the importance of evaluating pedagogical interventions in light of local factors, such as the particular classrooms and the particular students to which

they are applied (Muller, 2014).

This investigation seeks to address some of the methodological shortcomings of Muller's (2014) investigation by examining the influence of free writing practice on two intact classes of students enrolled in their second year of medical science study at a national university in Japan. The effectiveness of the pedagogic technique for these students, in this context, with a particular teacher is also evaluated, asking whether their writing speed improves through students practicing free writing during the course of a semester of study.

2. Research methods: Describing the pedagogy and the investigation

This section describes the classes involved in this investigation, the free writing pedagogy as applied in them, and finally turns to the research methods used to investigate the influence of free writing on student writing speed.

2.1 The classes

Two classes were used for this investigation, both second year elective English courses at the same national university in Japan. One class consisted of students majoring in Medical Science and the other of students majoring in Pharmaceutical Science. For the Medical Science class, 24 students were enrolled in the course, but due to a large number of absences on the final day of the course, data for only 13 students was available for comparison from the first to the final class. With the Pharmaceutical Science class, 38 students were enrolled in the course, although again due to a large number of absences on the final day of the course, data for only 25 students was available for comparison.

2.2 Free writing pedagogic methods

Herder (2009) offers an extensive description of and justification for the use of free writing as a pedagogic tool in the Japanese English as a foreign language classroom, explaining how much of Japanese English language education is form-focused and therefore many students' experience of language learning does not include Nation's (2007) ideal of 25% of time devoted to a fluency focus. The stance taken in this paper is similar to Herder's (2009); that the students would benefit from a significant amount of class time devoted to practicing fluency-focused activities such as free writing. In its most basic form, free writing involves asking students to write freely about anything they like for a set period of time (Herder, 2009). The rules are that students should not erase anything or check dictionaries for spelling, but that they should concentrate on producing as much text as possible in the time allotted (Herder, 2009). Herder and Sholdt (2014) advocate for ten minutes of writing time in the classroom, the amount of time devoted to free writing in the classes used for this research. Another variable of concern in free writing is whether students are provided a topic to write about or if they are asked to write about anything of interest to them. Some research has suggested that not providing a topic can lead to improved writing (Bonzo, 2008), but in terms of practicality, in my experience, students demand a topic be supplied for free writing. Thus, as a compromise, students were invited to write about any topic they wanted, but one was provided to use if they liked. An additional variable that has been shown to influence writing speed is whether or not a model is provided, as providing a model has been shown to result in increased writing speed

compared to students not shown a model (Way, Joiner, & Seaman, 2000).

The pedagogy implemented in this research began with students watching the teacher-researcher model the free writing task for the whole class for five minutes, which was followed by students asking questions about the content of the model. Next, students wrote for ten minutes, recorded the number of words written on a free writing record sheet (Appendix A), and then made any corrections they felt appropriate. To make the activity more communicative, students were then asked to summarize the contents of their writing for a partner in about 90 seconds, after which their partner was given an additional 90 seconds to ask questions. Finally, homework was assigned for the students to type their handwritten free writing into a Moodle forum, writing at least 100 words (and therefore expanding on their original free writing in some cases), and to comment on two other students' posts in the same forum. This final step was also included to make the free writing more communicative and to encourage students with slower writing speeds to expand on their free writing in their homework. This process was repeated for 14 of the 15 classes, starting with the second class of the semester. Each class was 90 minutes, and the free writing-related activities took up about 30 to 45 minutes of this time. The remaining time was devoted to other English comprehension tasks. While these tasks did involve writing, the focus was writing for accuracy and comprehension rather than speed.

2.2.1 Classroom free writing goals

Muller (2014) discusses the importance of not pursuing writing speed for the sake of speed and, citing Pallotti's (2009) criticism of goals for L2 production based on first language (L1) standards, concludes that classroom writing fluency goals based on international tests of English proficiency may provide a means of setting a writing length benchmark for students independent of L1 writing proficiency norms. Muller's (2014) suggested speed of 15 words per minute of fluent writing (not attending to accuracy) was set as a goal for the students' free writing time.

2.2.2 Dealing with the unexpected

At week three, it was evident that a small minority of students in both classes were writing 150 words or more in the ten minutes, and so these students were invited to write to a sample TOEFL writing prompt rather than continuing free writing, as they had already achieved the benchmark goals. This task was offered as an option to students who were writing very quickly, which meant they could choose between their own topic, the suggested free writing topic, or the TOEFL prompt during the course.

2.3 Research methods

This investigation compared students' first and final free writing word counts for the two classes. As the topic of free writing has been shown to influence students' writing speed, matched topics were used for the first and final instances of free writing: 'Write about your family' and 'Write about your friends.' These two topics have been shown to be similar in terms of difficulty for Japanese students (Nakanishi, 2006), and they were counterbalanced between the classes so that one class started with one topic and finished with the other and vice-versa. The measure of fluency used

for this investigation was total words written in ten minutes, similar to one of Fellner and Apple's (2006) measures (words written in 20 minutes) and also a measure advocated by Wolfe-Quintero, Inagaki, and Kim (1998) for evaluating fluency. Words written was selected because it correlates positively with other, more complex and analytically demanding measures of fluency (Chenoweth & Hayes, 2001) and is the most easily applied to handwritten writing data.

In addition to performing free writing during the last class of the semester, the difference in students' writing speed from their first and final effort was presented to them and they were asked to comment. These written reflections were collected and are summarized below. As students commented in small groups, five reflections were collected from the Medical Science majors and six from the Pharmaceutical Science majors.

3. Results

The data available for both classes in terms of their writing speed from the start and the end of the free writing practice are presented in Table 1. None of the changes in writing speed reported in Table 1 are significant at the $p < .05$ level using Student's t-test.

Table 1. Results for both classes free writing from the start and the end of the semester

Class	n	Semester start, average words (SD)	Semester end, average words (SD)	Change
Medical Science	13	120 (28)	121 (29)	+1
Pharmaceutical Science	25	98 (28)	100 (33)	+2
Combined	38	106 (29)	107 (33)	+1
High performers removed (> 150 words at start)	35	101 (25)	106 (34)	+5

Examining Table 1, students did not appear to improve their writing speed during the course of the semester, a finding similar to Muller's (2014) national high school group. Interestingly, in commenting on why they did not improve their writing speed, the counterbalanced topic selection meant that of the five Medical Science major reflections, two stated that 'Write about your family' was a more difficult topic than 'Write about your friends,' the topic they wrote about for their first free writing. Among the Pharmaceutical Science majors, three of the six reflections identified topic difficulty as factoring into the lack of improvement in their writing speed, despite their having started with family and finished with friends. Among the Pharmaceutical Science majors, two responses referred to writing fatigue with respect to the lack of gains in writing speed. With the Medical Science majors, two responses mentioned

the need to study for pending exams in other subjects led to a lack of energy to write in the final class of the semester, echoing Ushioda (1996) and Dörnyei's (2001) discussion of student motivation varying over a course of study. Of all eleven responses, only one from the Pharmaceutical majors claimed that the reason for the lack of improvement in students' writing speed was due to no improvement in their writing skills.

3. Discussion

While the results outlined above are disappointing in the sense that the students' writing speed did not increase, which was one of the goals of implementing free writing in the first place, there are a number of caveats that should be considered before rendering a final verdict regarding the use of free writing with these students in this context. One is that word count as a measure of fluency has been criticized as crude, and that alternative, more desirable measures have been promoted in some recent literature. Specifically, Abdel Latif (2009, 2014) advocates for the use of a process approach to evaluating student fluency. The problem with applying such a research methodology in an intact classroom, outside of a controlled experimental setting, is that the technological and analytical requirements are complex. Students' writing activity needs to be individually recorded, and time has to be set aside for review of the data gathered. One measure Abdel Latif (2014) strongly advocates for is the use of mean length of bursts (Abdel Latif, 2014), but these are largely determined through the use of measuring pausing during writing and asking students to conduct their writing while simultaneously performing a think-aloud protocol, describing what they are thinking for the benefit of the researcher. While such measures may have promise from a researcher perspective, from a teacher perspective they remain impractical to implement in the majority of second language writing classrooms. In addition, the authenticity of asking students to think aloud while they write is questionable.

More positively, some methods have been suggested for the creative statistical manipulation of the data available. With regard to extensive reading data, Atkins (2014) suggests the use of averaging protocols to complete missing data to rescue otherwise unusable results (due to, for example, students missing class) and statistical manipulations which allow for the examination of trends throughout a course rather than simply comparing numbers from the first and last classes during a research period. Unfortunately, applying Atkins' (2014) suggested manipulations and evaluations to the data in this investigation is beyond the scope of this report, but doing so would allow for examination of some of the hypotheses suggested by students, namely that they improved their writing speed initially but that their improvement slowed over time. There are potential issues with transferring measures developed for extensive reading (where the vocabulary and overall difficulty of passages are more carefully controlled than can currently be accomplished with writing prompts) to writing data, but this could be a fruitful avenue for future exploration.

Additionally, it may be that students would benefit more from less writing time since there is little evidence that ten minutes of free writing is more desirable than five minutes. In this context, with these students, less may be more. This is another avenue for potential investigation that should be followed before determining that free writing is unsalvageable in this context.

Finally, there are a number of other measures of student performance, including measures of accuracy and

complexity, in addition to more sensitive measures of fluency. Many (but not all) of these measures are summarized by Chenoweth and Hayes (2001). Future analysis could examine these other measures to determine whether one group of the Medical Science students were right when they suggested in their reflection that while they were writing largely the same number of words, the 'contents' of what they were writing had changed. Unfortunately, since such additional analysis often requires digitized data, as in the examination of lexical profiles of student writing, hand written free writing is not an ideal starting point for exploring such questions. The conversion of handwritten data to digital form may require more time and resources than many language teachers have at their disposal.

4. Conclusion

This paper explored the question of the effectiveness of free writing for two elective medical science English classes at a national university in Japan. The measure used, number of words written in ten minutes, did not show any significant change between the first and final instance of free writing, although there were a number of factors outside the researcher's control with respect to this result. One was that in both classes the attendance at the final class was unusually low, and so the number of students with comparable data was more limited than it otherwise may have been. Another is that more complex evaluations of fluency, such as length of P-bursts (Chenoweth & Hayes, 2001, p. 91), were not applied to the students' writing. Finally, there are pedagogical adjustments that can be made, such as reducing the writing time from ten minutes to five minutes, which may result in students' being able to maintain their writing focus more successfully throughout the semester. This paper has not tried to answer these additional questions with respect to free writing, but has posed them as challenges worthy of future investigation. Finally, it was asserted in the introduction that despite lacking in statistical significance, it is important to disseminate as many research results as possible, including those presented here, in order to make as complete a picture of the research field as possible publicly available.

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Appendix A Example completed free writing record sheet

My writing chart - Spring 2014 Friday 1:00 English V

Name: _____ Student number: _____

Words	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
300															
290															
280															
270															
260															
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230															
220															
210															
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160															
150															
140							145		149						
130		129	135			137								131	
120				127				122							
110											113	121			
100	102									105					105
90					98										
80															
70															
60															
50															
40															
30															
20															
10															
Class	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Topic	My family	Spring Break	Golden Week	A childhood memory	home town	food	TV show or movie	my favorite restaurant	my dream	part-time job	my classes	a time I tried and succeeded	My favorite place		My friends

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