

(Note)

Enhancing EFL Writing Courses with the Online Student Response System *Socrative*

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Keywords

EFL writing *Socrative* brainstorming comprehension checks

INTRODUCTION

In recent years language educators have been incorporating a wide range of online tools into their courses. While some believe the constant stream of new technology can have a negative impact on educators (Allan, 2009) and learners (Chen, Pedersen, & Murphy, 2012), the benefits that carefully selected online tools can offer in EFL (English as a Foreign Language) education make them very appealing. In this project, two digital tools were used in two semester-long EFL writing courses at a Japanese university. The first tool, a blog, was used for peer feedback. Details about this part of the project were published in the proceedings of the Fourth Annual Asian Conference on Technology in the Classroom (Ohashi, 2014). The second tool, which is the focus of this article, was an online student response system (OSRS) called *Socrative*, which was used to check students' understanding (comprehension checks) and help them plan writing tasks (brainstorming).

BACKGROUND

OSRSs

OSRSs are web-based tools that are used for collecting and sharing data. They are a modern-day version of television audience response technology, a decades-old system still used today which allows audience members to share their responses to multiple-choice questions by pressing buttons on a device known as a clicker. Audience response technology has been successfully exploited by educators, particularly in lecture settings where communication between students and the lecturer is difficult due to large student numbers (Cardoso, 2011). However, incorporating this technology into courses can place a financial burden on schools as they must purchase clickers for students and software for teachers. OSRSs overcome this problem by moving the key functions of the audience response system online. This makes them similar to online survey tools; however, in educational contexts, the use of online survey tools and OSRSs tend to differ, with an OSRS's responses typically

immediately shared with both the data collector (teacher) and the contributors (students), in the same way that audience response data are shared with audience members.

In this study, the OSRS *Socrative* (www.socrative.com) was used. Like most OSRSs, *Socrative* can be used on computers, tablets and smartphones, provided there is an Internet connection available. To use *Socrative*, the person who wants to collect data needs to set up an account, but those who provide the data only need to enter a code that can be supplied by the account owner. There is no need for either the account owner or respondents to download software, but smartphone and tablet users may download a free app for better display options. *Socrative* allows learners' answers to open-ended questions to be recorded in full, and answers to multiple-choice questions are automatically tallied and converted into simple, visually pleasing graphs that show the number of responses per category. The written responses and graphs appear on the teacher's screen, which can be shared with students by showing the teacher's device to students directly in small classes, or connecting it to a shared screen in larger ones. It is currently free to use *Socrative* and as it can be used on Internet-capable devices such as computers and smartphones, which are readily available in many educational settings, financial burdens are reduced or removed. It was used for two main purposes in this study: to check EFL writing students' understanding (comprehension checks) and help them plan writing tasks (brainstorming).

Comprehension Checks

According to Krashen (1981), language acquisition requires an understanding of spoken and written content and without comprehensible input learners will not progress. Although understanding is vital to learning, Cheng and Warren have noted that in the 1980s second language acquisition researchers "began to observe the relative absence in classroom discourse of such interactional features as comprehension checks through which learners and their teachers check the comprehension of each other's message meaning" (2007, p.190). This observation was based on work by Doughty and Pica (1986), Long and Sato (1983), Pica and Doughty (1985), and Pica and Long (1986). While these observations were made quite some time ago, the importance of checking understanding is just as relevant today, and they serve as a reminder that comprehension checks can be overlooked if care is not taken.

Despite the importance of checking that students understand, it is not always easy to do so. In Japan, where this research project was conducted, it is not uncommon for teachers to be met with silence when they ask questions. With students feeling too shy or reluctant to speak in front of others or raise their hands when questioned, comprehension checks quickly become complex tasks for teachers to carry out effectively. One way to overcome this is to give tests that cover the most important points, but the extra pressure this can place on students, and the time that it takes to prepare, administer and check the tests, is prohibitive. As such, an approach that would make students feel more comfortable and take less time was sought.

In this study the decision to use the OSRS *Socrative* to check comprehension through quizzes in class was made for several reasons. Firstly, *Socrative* could give both the teacher and students immediate feedback on what had been understood by the class as a whole. As students answered each question, their answers would be sent to the teacher's account and could be easily shared with

the class. This would allow the teacher to give immediate feedback when necessary and let individual students know what their level of understanding was compared with the rest of the class. It was hoped that this would increase understanding and prompt those who needed further clarification to approach the teacher or their classmates, or do some self-study. In addition, it was hoped that the opportunity to participate anonymously would increase the number of students who responded to teacher-led comprehension checks by encouraging shyer students to answer freely. Furthermore, it was hoped that game-like elements, such as time restrictions with countdowns and attractive graphs that share the “votes” for multiple-choice questions, would allow the quizzes to be done in a timely and engaging way that encouraged participation. *Socrative* was also chosen because it would allow learners to pool their ideas when preparing for writing tasks, as discussed in the section on brainstorming below.

Brainstorming

Brainstorming is a way of generating a large number of ideas from a group in a short period of time (Rawlinson,1981). Osborn (1953), the man credited with developing this idea-collection method, offers four guidelines for successful group brainstorming: (1) contributions should not be criticized; (2) participants should think in a freewheeling, wild way; (3) a large number of ideas should be the goal; and (4) individuals should not only contribute their own ideas, but also generate new and better ones by improving on and combining existing contributions. Acceptance of this method within the education sector, with varying levels of adherence to Osborn’s guidelines, is evident in the high frequency of brainstorming exercises in writing courses and textbooks.

The value of brainstorming has also been expounded in numerous empirical studies. Rao (2007) found that brainstorming stimulated thinking and that students could create ideas, arrange information logically, and learn to analyze and summarize by adding this step to the writing process. Voon (2010) used brainstorming with a group of 33 students of various nationalities and noted that 70% of the students got higher scores for the content component of their essay grade after brainstorming was incorporated into the writing process. She also noted that students were able to write more and argue more convincingly after they brainstormed. In the Japanese context, Hayashi (2005) noted that the development and organization of ideas is “the most problematic area for Japanese learners in the writing process”. This assertion was made after reviewing studies on Japanese EFL writing students (Era, 1999; Hirose, 2001; Shi & Fujioka, 2000), and confirmed by her own research.

Brainstorming is clearly beneficial, but the amount of time that can be allocated to it in class is limited. In situations where students are reluctant to share their ideas or spend too much of the allocated time copying each other’s notes, brainstorming can be less productive than desired. One way to overcome these problems is to introduce computer-mediated options. In a study with 13 students in a computer-assisted English as a Second Language (ESL) writing course at an American university, students reported that using computers and the university’s online course management system during the drafting process “facilitated the process of learning to write in English” and “computers made the process faster and easier” (Ghandoura, 2012, p.61). Furthermore, there is evidence to suggest that computer-mediated participation may be beneficial for shyer students, with

Ghandoura (2012) noting that students in the study above “who were less successful during the class tended to be more comfortable with the use of computers in terms of speaking up in class (i.e. expressing ideas and asking questions)” (p.62). In this case, the online mode was more successful for shy students than face-to-face interaction, so is worth considering in Japan, where shyness is common.

In terms of this study’s research context, brainstorming was a regular part of all writing classes in the English department before the project commenced, but the teacher’s past experience with it in her classes highlighted several problems. Firstly, students tended to take a long time to begin brainstorming, with individuals and groups spending a substantial amount of time off-task before they began making lists. Furthermore, sharing brainstorming notes was often time-consuming and ineffective, as students were reluctant to write their answers on the whiteboard without continual prompting, and many oral responses were inaudible. Even when everyone participated well, it took time to note down each group’s ideas after they had been shared, and some students could not see the notes on the whiteboard clearly due to its size and position. Another problem was that there was no written record of the notes for absent students, who were then left to brainstorm alone or follow up with a classmate. In order to overcome these problems, brainstorming through *Socrative* was trialled in this project.

AIMS AND METHODS

The aim of this project was to answer the following broad questions: 1) From the teacher’s point of view, it is beneficial to use *Socrative* for comprehension checks and brainstorming? and 2) How do students feel about using *Socrative* for comprehension checks and brainstorming? The teacher’s in-class observations and reflections were used to answer the first question, and a questionnaire was used to collect data from students to answer the second one.

Participants

The participants in this study were enrolled in either a first-year or second-year EFL writing course at a women’s university in Japan. Fifty of the 52 students who were enrolled in these courses completed a questionnaire at the end of their course, with 25 participants from each year level. The vast majority of the participants were 18- to 21-year-old women from Japan, with only two who were older than this and only one who was not Japanese.

Procedures

4 *Socrative* was introduced in the first lesson of each course, then used periodically throughout the semester. To introduce participants to *Socrative*, a short self-introduction activity was done in the first lesson. Participants were shown how to log in with an access code and directed to answer several questions about themselves that appeared on their computer screens. There were both open-ended and multiple-choice questions. In addition to allowing the teacher to gather information about the students that were enrolled in the courses, doing this activity allowed the students to learn how to use *Socrative*. In the classroom used for this project, each student had access to their own computer and there was an extra monitor between each pair of students that the teacher could use

to display what was on her own computer's screen. The teacher's screen was shared to show the class everyone's answers. They could see that open-ended answers were displayed in full and answers to multiple-choice questions appeared as graphs. They could also see that their names were not listed when answers to each question were shared with the class. They were told that copies of their answers could be saved for future reference and that their names would be recorded but would not be shared. This was done to encourage participation from students who may have felt uncomfortable participating openly.

Socrative was used to check comprehension two times in the first year course and three times in the second year course. The comprehension checks were done in two ways. Firstly, they were used to check understanding of key course content through multiple-choice questions that were determined in advance and recorded in *Socrative*, along with the answers. These were done using the "teacher pace" setting, which meant that each new question was sent to the class when the teacher wanted students to see it. The flow of this activity was as follows: 1) The teacher and students logged into *Socrative*; 2) The teacher sent the first question to the students; 3) They answered and got immediate feedback about the accuracy of their choice; 4) The teacher got feedback about how many students chose each answer in graph form. The graph was updated in real time, with columns moving as each student entered their answer; 5) When most of the students had answered, the teacher started a countdown to encourage the last few students to choose an option; 6) The teacher shared the graph with the class and gave oral feedback about the answers, then sent the next question to students. The other way that *Socrative* was used was to ask questions that had not been prepared in advance to deal with questions that arose during a lesson. In this case, the teacher had the option of asking the questions orally or typing them in. As students' comprehension was thought to be higher when dealing with written material, the teacher chose to write the questions.

In terms of the quiz content, it is important to note that while some questions addressed areas such as vocabulary, not all questions were language-based, so did not relate to language acquisition per se. However, as the classes were conducted solely in English it was expected that some of the misunderstandings that occurred happened because explanations about course content were given at a level that exceeded students' comprehensible input threshold. Through a cycle of explaining, doing quizzes, and explaining again, the teacher was better able to understand the level that information needed to be pitched at in order to be comprehensible to students.

Socrative was also used for brainstorming once in each course. As mentioned above, sharing brainstorming notes by writing them on the whiteboard or sharing them orally was problematic, and *Socrative* offered a way to replace these options. When brainstorming with *Socrative*, students discussed their ideas in groups and added them directly into *Socrative* as they thought of them. Their contributions could be seen on the teacher's screen in real time, with new ideas from groups appearing as soon as they were submitted. When a few groups had finished the teacher shared her screen with the class, saved the content, and embedded it into the class website after the lesson so students could refer to it when writing their first draft. Absent students were sent an email notifying them that these brainstorming notes were available.

Data Collection

During the semester the teacher reflected on the way the tools were being used and thought carefully about whether or not they were useful replacements or supplements for other methods she had tried for checking comprehension and brainstorming. At the end of the semester, the students were invited to complete a questionnaire about *Socrative* (see appendix). The questions targeted students' opinions on *Socrative's* ease of use, its usefulness for studying English, and aspects of it that students liked and disliked. It also directly addressed brainstorming and comprehension checking (referred to as doing quizzes), asking if it was an appropriate tool for doing these activities, and if students would like to continue using it for these activities in the following semester. There were ten questions in total, which included multiple-choice questions, open-ended questions, and statements that were answered with a four-point Likert scale (strongly agree, agree, disagree, strongly disagree).

Data Analysis Methods

As both closed-ended and open-ended questions were used in the questionnaires, quantitative and qualitative data were collected. Quantitative data were converted to percentages and response categories were combined where appropriate. Qualitative responses were categorized into key themes. These were found by searching for ideas that appeared in multiple students' responses. Each idea was allocated a colour, with some of the more detailed responses allocated multiple colours. Once the main themes had been established, each colour-coded section was revised to ensure it fit well with the theme it had been assigned to, with revisions made where necessary. After coding had been completed the data were set aside for several days and coded again to check for intra-rater reliability. Finally, the themes were ranked by counting how many participants had mentioned each one, and representative quotes (which are copied in this article unedited) were selected.

RESULTS

The Teacher's Perceptions

The decision to use *Socrative* was one that was made after facing problems in writing classes in the past when checking students' comprehension and doing brainstorming activities. Using *Socrative* proved beneficial for both of these tasks. Using it to check comprehension was useful because it let the teacher know on a question-to-question basis how many students in each class got each question right or wrong and when desired, individual scores and answers could be viewed at the end of the quiz. While this could be achieved with paper-based quizzes, time would need to be spent collating the results and students would likely feel pressure to pass. The quizzes had a game-like feel so many students smiled and laughed as they did them, which does not generally happen when taking quizzes in the traditional way. Answers to the quizzes were generally entered quickly, with a countdown technique used to encourage slower participants to answer before everyone's responses were revealed to the class. This prevented the quizzes from taking up too much class time, and if some students really could not make a decision the answer was displayed without waiting for everyone to participate. However, this was rare, as student participation was close to

100% for all quiz questions in all quizzes, creating a stark contrast to prior failed attempts at eliciting responses with a show of hands.

Socrative was also beneficial for brainstorming as it saved time and allowed ideas to be shared with more students. Answers were written directly into *Socrative* and students were told a file with all of the notes would be added to the class website, so time did not need to be allocated for copying down notes. This meant more class time was available for other activities. Another benefit was that no ideas were lost. When sharing each group’s ideas orally, some were not shared effectively due to the softness of students’ voices or because it was too difficult to read them on the whiteboard, especially for those students sitting at the back of the room. With the answers shown on a computer monitor on students’ desks, each student could see the information clearly in class and as the notes could be easily embedded into the class website, absent students also had access to them.

The Students’ Perceptions

Students’ perceptions were gathered through a questionnaire. Most of the quantitative data from the questionnaire are reported in tabular form and qualitative data are presented as themes. Questionnaire items are listed in full in the appendix so will not be shown here. The vast majority of the feedback about *Socrative* was positive. Table 1 shows that participants found it to be user-friendly, fun and useful for their studies. Ninety-six percent of the participants agreed it was a simple tool to use and 98% enjoyed using it. All but one participant (2%) agreed that *Socrative* helped with their English studies. In terms of specific tasks, 100% of participants agreed it was useful for doing class quizzes and 98% felt it was useful for brainstorming.

Table 1
Students’ Views after Using Socrative in an EFL Writing Course

	SA	A	D	SD
<i>Socrative</i> is easy to use	58%	38%	4%	0%
I enjoy using <i>Socrative</i>	56%	42%	2%	0%
<i>Socrative</i> helps me with my English studies	38%	60%	2%	0%
Using <i>Socrative</i> is a good way to do class quizzes	60%	40%	0%	0%
Using <i>Socrative</i> is a useful way to brainstorm	52%	46%	2%	0%

SA = strongly agree A = agree D = disagree SD = strongly disagree

Open-ended questions were used to add depth to the quantitative data above by asking participants to give reasons and share their thoughts on *Socrative* more freely. A number of themes emerged from the qualitative data. First, it was clear that most participants liked *Socrative*’s information-sharing function, with many referring to the sharing of opinions and ideas, or commenting positively on answers being shared in graphs. Representative comments included “I enjoyed using *socrative* because I could see other’s opinions easily” and “I like that I can see the number of the students who choose the answer”. An area of conflict arose in terms of the fast-paced nature of *Socrative*, with some participants commenting favourably on the speed with which

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responses could be entered and shared, while others disliked the pressure to input answers quickly. The benefit of instant feedback was valued, as shown by comments such as “If I choose incorrect answer, I can know the correct answer and why right after.” In contrast, participants who disliked the fast pace made statements such as “I haven’t enough time so I don’t think deeply.”

When considering the benefits of *Socrative* for different tasks, slightly different patterns emerged. The key reasons that *Socrative* was seen as a beneficial medium for quizzes (in order of times mentioned) were: a) students could share ideas and answers; b) it was enjoyable; c) it was fast paced/instantaneous; and, d) participation was anonymous. In terms of brainstorming, the reasons listed are as follows: a) students could share ideas and answers; b) it helped students to reflect on the topic and brainstorm themselves; and, c) answers were shared instantly. While this shows that there are similarities between aspects of *Socrative* that were valued when doing quizzes and brainstorming, it is interesting to note that enjoyment was not mentioned at all in relation to brainstorming, with self-reflection valued over class-based fun.

To ascertain participants’ willingness to continue to use *Socrative*, they were asked about the semester ahead. Results pertaining to brainstorming were very encouraging, with sixty-six percent indicating they would like to use it again and the remainder indicating they did not mind either way. There was an even stronger desire to use it for quizzes, with 83% of respondents indicating they wanted to continue using it for this, and the remainder indicating they would not mind using it. Unfortunately, due to a data collection error two participants’ responses were unavailable for the final question on quizzes. However, even without these two responses, there is enough support to suggest that the group as a whole was very receptive to continuing to use *Socrative*.

DISCUSSION

The research questions that guided this study asked whether using *Socrative* for comprehension checks and brainstorming was beneficial from the teacher’s point of view, and examined students’ perceptions of *Socrative* for these two activities. The preliminary findings suggest it was highly beneficial from a class management point of view, both for comprehension checks and brainstorming. The main reasons for this are that comprehension checks gave immediate feedback to students and the teacher, and brainstorming notes could be shared in a more timely and reliable manner. However, there are several limitations. Firstly, there were times that unplanned comprehension checks were needed but *Socrative* was not used because logging in, typing in the questions (or even opening the right part of *Socrative* and asking orally), then getting students to log in was too time consuming. This could be overcome if the teacher and students made it a habit to log in at the start of each lesson. If this were done, it would also be possible to set *Socrative* to open response so that students could type in their own questions for the teacher at any point during the lesson. Doing so would make it possible for students to not only react to the teacher’s prompts, but also to ask the teacher questions if they did not understand, without having to do it in front of the class. The other main limitation related to constraints the computer-based medium imposed when brainstorming. Although brainstorming notes could be written in diagram form on paper or on the whiteboard, they could only be entered as text through *Socrative*. This made it difficult to show the connections between ideas for those who preferred to use mapping

(a method in which related ideas are written in bubbles that are connected with lines).

From the students' perspective, questionnaire results show that the vast majority of participants responded positively to *Socrative*. Almost all of them enjoyed using it and found it easy to use. This is a valuable finding as it suggests *Socrative* can be introduced without causing participants to feel stress or leading to information overload, which can occur when they are burdened with not only course-specific learning but also have to learn to use new tools. It was also perceived to have pedagogical benefits, with 98% of participants finding it useful for their English studies, 100% agreeing that it was a good way to do class quizzes and 98% agreeing it was useful for brainstorming. However, while many liked the immediacy of *Socrative*, commenting positively on the benefits of reading and typing quickly, getting instant feedback, and seeing contributions appear right away, some disliked being pressured to answer within a limited time, which suggests that educators need to find a balance between pushing participants to answer and giving them enough time to think about their responses.

Finally, although only mentioned by several participants, it is worth noting that being able to participate anonymously was valued. As one participant wrote, "Students answer with no name on *socrative* but everyone can (see) their answer. It is the most good point of *socrative* I think. If we are asked by raising our hands, maybe we become shy". While only a few participants mentioned privacy and anonymity, classroom observations suggest that this was a key factor in the popularity of this tool, and the lack of pressure that anonymity provided may be one reason why the quizzes became "fun". During this study, the total number of hands raised when participants were asked to respond to multiple-choice questions never reached 100%, with less than 50% participation not uncommon, even with persistent prompting. In stark contrast, there was regularly full participation in the quizzes, with indecisive students generally inputting their answer if a countdown was introduced. As *Socrative* could be done anonymously, it provided a way for those students who did not want to share their answers openly to participate. This is something for educators to bear in mind when considering participation rates as it suggests some students may be more willing to join in if they do not have to do so in front of their peers. Interestingly, anonymity was only mentioned in relation to the quizzes. This may suggest that anonymity was more important to participants who were concerned about making mistakes in front of others, as the quizzes mainly used closed-ended questions that had right and wrong answers, but participants were repeatedly told throughout the course that all brainstorming contributions were acceptable.

CONCLUSION

This article has reported on how a teacher used *Socrative* for comprehension checks and brainstorming in two EFL writing courses at a university in Japan. The study has several limitations, which include that fact that *Socrative* was only used several times in each course and students' written responses to the questionnaire tended to be brief. Also, as it was a small study with only 50 participants, the results cannot be generalized. Despite these limitations, the benefits *Socrative* offered in this teaching context were noteworthy, and have led to its use being successfully extended to other courses within the department. The use of *Socrative* or other OSRSs in EFL education is still a relatively new area that has not been widely researched, so this study makes a small but valuable

contribution in this area. As more educators begin to use this technology in their classes and share their findings, a more comprehensive picture of the possibilities and limitations of OSRS technology will emerge. Therefore, other EFL educators are encouraged to explore the potential of *Socrative* or other OSRSs in their courses and share their results.

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Appendix

Socratic Questionnaire

1. Socratic is easy to use.
Strongly agree () Agree () Disagree () Strongly disagree ()
2. I enjoy using Socratic.
Strongly agree () Agree () Disagree () Strongly disagree ()
3. Socratic helps me with my English studies.
Strongly agree () Agree () Disagree () Strongly disagree ()
4. What do you like most about Socratic? Please write your answer in as much detail as you can.
5. What don't you like about Socratic? Please write your answer in as much detail as you can.
6. Socratic was used to do quizzes in class. This is a good way to do class quizzes.
Strongly agree () Agree () Disagree () Strongly disagree ()
7. Please explain why using Socratic is/isn't a good way to do class quizzes.
8. Socratic was used to share ideas for writing assignments in class (to brainstorm together). This is a useful way to brainstorm.
Strongly agree () Agree () Disagree () Strongly disagree ()
9. Please explain why using Socratic is/isn't a useful way to brainstorm.
10. Would you like to use Socratic again next semester for the following tasks:
brainstorming? Yes () I don't mind either way () No ()
doing class quizzes? Yes () I don't mind either way () No ()

(受理 平成26年11月25日)