

THE USE OF *SOCRATIVE* IN ESL CLASSROOMS: TOWARDS ACTIVE LEARNING

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Abstract

The online student response system (SRS) is a technological tool that can be effectively implemented in English language classroom contexts and be used to promote students' active learning. In this qualitative study, *Socrative*, a Web 2.0 software, was integrated with active learning activities and used as an SRS to explore English second language learners' (ESL) perceptions of the use of this tool. The results showed that both techniques (SRS and active learning activities) contributed to increasing the students' level of engagement, promoted their critical thinking, and stimulated their collaboration. This current research describes the benefits of SRS in supporting ESL students' active learning.

Keywords: *Socrative*; active learning; critical thinking; SRS

1. Technology in education

The increased use of computer technology in our daily life has its influence on education (McGrail, 2005). General educational reforms to institute innovations have been a goal of the U.S. federal government for more than a century; the overall goal is to enhance students' academic achievement, and educational technology has been considered as part of the reforms (Fullan, 2007). The Association for Educational Communications and Technology (AECT) defines the term 'educational technology' as the "ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (Januszewski & Molenda, 2008, p. 1). Many scholars believe that one of the interesting developments in the language education field is the use of educational technology in language learning (Kessler & Hubbard, 2017). The effective integration of technology may bring about significant positive outcomes to students' learning. For example, the use of technology could (a) transform the traditional classroom environment from a teacher-centered to a student-centered environment (Drexler, 2010), (b) lead to learners' autonomous learning (Terrell, 2011), (c) help teachers create a more engaging and interactive learning environment (Egbert & Neville, 2015; Stanley, 2013), (d) provide second language learners with the opportunity to interact via speaking and writing in the target language, and (e) motivate

“learners to produce more language than they otherwise might have done” both outside and inside classrooms (Stanley, 2013, p. 2). Therefore, as educators such as Stanley (2013) suggest, the incorporation of technology in education could be a valuable asset to the academic development of students to equip them with the knowledge and skills to meet the needs of the 21st century. This preparation would include, but is not limited to, communication skills, creativity, critical thinking, and collaboration.

Student response system (SRS), for instance, is one of those educational technology tools that instructors could use during classroom instructions to engage students into active learning roles. SRS facilitates interaction between students and instructor using hand-held electrical devices (Hunsu, Adesope & Bayly, 2016). Through the effective use of SRS, both instructors and students have access to the students’ responses on data show screen (Figure 1) shows.

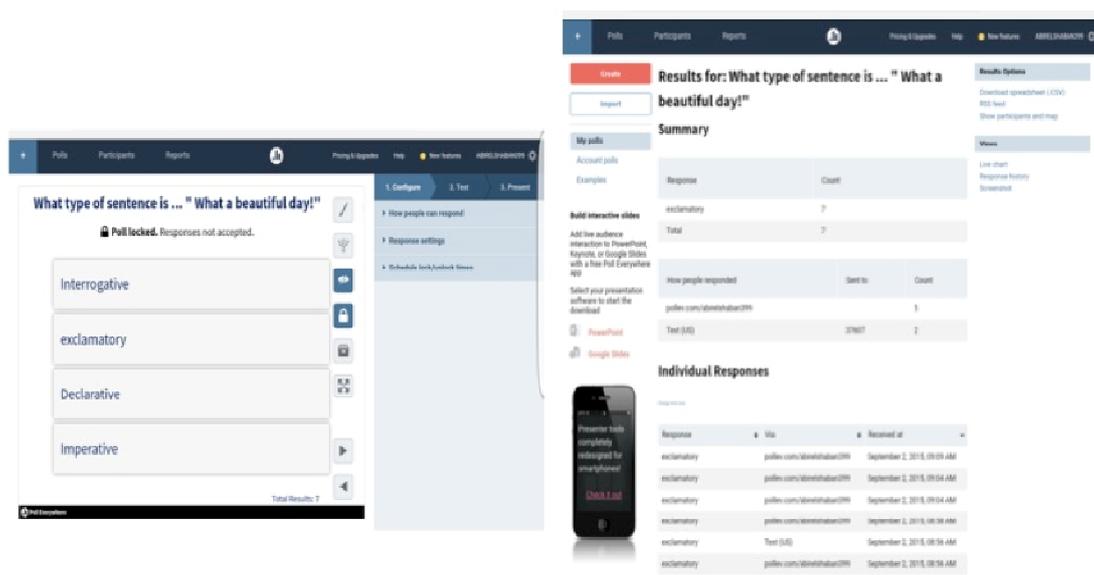


Figure 1. An example of ESL students’ responses to an MCQ on the SRS technology software *Polleverywhere*

Instructors can gather students’ responses on multiple-choice (MCQ), true-or-false, closed-ended and open-ended questions. Further, some SRSs can be included within a presentation software, such as *Microsoft PowerPoint*, to increase the students’ engagement throughout the lecture (Nelson, Hartling, Campbell & Oswald, 2012). The SRS is widely

known with different names such as classroom response system (CRS), audience response systems (ARS), electronic response systems (ERS), polling systems, Clickers, Zappers...etc. Fortunately, in the recent years, with the development of technology, more cost-efficient and advanced SRS tools became available in market. Some of these tools are *Socrative* (Socrative, 2017), *Poll Everywhere* (Poll Everywhere, 2015), and *Kahoot* (Kahoot, 2017). Figure 2 shows some of the popular clickers in the market.



Figure 2. A collection of SRS tools that language teachers can use to promote ESL students language learning

This section is an attempt to provide a quick overview of the impact that technology has had on the academic achievement of many of today's students. Their adoption of technology has changed how these students learn, adding more expectations on how teachers should teach. With the integration of education technology in classroom settings, teachers are not only making their students' learning experiences more enjoyable, but they are also preparing them for better future employment opportunities.

2. Benefits of using SRS in the classroom

SRS tools have received attention in the educational field when many instructors started integrating them in schools and universities. Some studies showed that faculty and students

from a wide range of disciplines perceived the incorporation of SRS in classroom instructions as fruitful. For instance, the Center for Teaching Excellence (CTE) at one of the U.S. universities conducted a study to examine the effectiveness of using SRS in classrooms. Four faculty members from science, art, language, and education along with 74 students were the participants of this study. The findings revealed that the faculty had a positive experience using SRS and they showed willingness to continue using them in future. Additionally, the survey data indicated that the students perceived the use of SRS positively. SRS enhanced the students' in-class discussion, encouraged classroom participation, and facilitated students' learning of new terminologies (Crews, Ducate, Rathel, Heid & Bishoff, 2011).

Furthermore, in another research study, Stagg and Lane (2010) surveyed undergraduate students taking Information Systems course to investigate their perceptions of the use of clickers to support information literacy instruction. Results showed that the use of clickers was effective in engaging and facilitating students' learning. The students also perceived the use of clickers as easy and fun. In a similar research study, Johnson and Lillis (2010) evaluated students' experiences of the use of an audience response system (ARS) in the laboratory setting. Results revealed that the use of ARS enhanced the students' motivation, attention, and provided the instructors with instant feedback regarding the students' understanding of the subject matter. Additionally, many instructors felt enthusiastic about using clickers. It helped their students with the fade-in-attention phenomena during long lectures (Keller, Finkelstein, Perkins, Pollock, Turpen & Dubson, 2007; Morales, 2011).

In addition to the positive perception of SRS by students, some other studies indicated that the incorporation of SRS in teaching could promote and stimulate peer collaboration (Kulikovskikh, Prokhorov & Suchkova, 2017). For example, McDonough and Foote (2015) studied the impact of individual and shared clicker use on students' collaborative learning. The research results showed that shared clicker activities resulted in a more collaborative learning and stimulated students' collaborative reasoning. This means that the effective incorporation of SRS could foster students' collaborative learning.

In other studies, scholars highlighted the effectiveness of SRS in enhancing students' focus and in engaging them. For instance, Johnson and Lillis (2010) incorporated the use of SRS in small lab groups. Results showed that the use of SRS can increase students' academic focus and performance. Further, in a cyclical action research, Habel and Stubbs (2014) found out that the use of SRS in the classroom created more engaging lectures than traditional ones. The encouraging results reported by many scholars reflect the reliability of incorporating SRS in classroom settings (Habel & Stubbs, 2014; Johnson & Lillis, 2010).

The specific SRS technology that this paper addresses is the software called *Socrative*. This Web 2.0 tool was developed in 2010 by Boston-based graduate students for response formative assessment. The tool provides instructors with a flexibility to engage students in classroom activities using any of the available personal mobile technological tools such as smart phones, laptops, or tablets. To integrate *Socrative* into teaching, an instructor can design a multiple-choice (MCQ), true/false, or open-ended short questions. To be used as a response system, an instructor needs to create multiple-choice questions and have the students select what they think of it as the right answer. Student responses are sent wirelessly and can be displayed on a data-show screen for prompt feedback. What is really interesting about this tool is that it is cost-effective and does not require administrators' decisions to use them, unlike the traditional clickers which require administrators' funds. It is important to note that the maximum number of students who can participate in a single Socrative free classroom is 50, while the pro version can accommodate up to 150 participants and different private and public rooms (see Table 1).

Table 1. The comparison of free and pro features of *Socrative*

Socrative Free	Socrative PRO
On-the-fly Questioning	Everything with Free, plus all the following:
1 public room for your classes	Up to 10 private or public rooms
50 students per session	150 student capacity
Space Race Assessment	Space Race countdown timer
Formative Assessments	Roster Import via CSV or Excel
Visualize Real-time Results	Restricted access to rooms with students ID# requirement
Device Accessibility	Personalized header for students
Reporting	Instant quiz share to colleagues with unique link
Share with an SOC code	Merge quizzes
Help Center Access	Silent Student Hand Raise
State and Common Core Standards	Shareable links for easy student login

With that being said, access to the Internet and any of the technological tools such as tablets, laptops, or smartphones are necessary for teachers and students to participate in any activity that involves the integration of *Socrative*. Also, students do not need to create an

account in order to participate. All they need is to get an access to the instructor's classroom code. Thus, the purpose of this paper is to provide examples of some of the best pedagogical practices that can inspire teachers to use and to think of similar activities that could promote students' active learning through the use of this SRS.

3. Active learning

Effective teaching and learning entail the use of different instructional and methodological strategies to meet the learners' needs and stimulate their critical thinking and creativity (Prince, 2004). One of the effective approaches to meaningful learning involves students' participation in active learning activities. The key characteristic that is associated with active learning instructional strategies involves students "in doing things and thinking about the things they are doing" (Bonwell & Eison, 1991, p. iii). Guthrie and Carlin (2004) maintained that today's students are expressly attracted to learning in a more engaging environment. Thus, active learning instructional strategies could increase students' engagement levels. In other words, when students are involved in active learning, this means that they are participating in active roles in the learning process and are not only a passive recipient of information (Petress, 2008). Collins and O'Brien (2003) define active learning as:

The process of having students engage in some activity that forces them to reflect upon ideas and how they are using those ideas. Requiring students to regularly assess their own degree of understanding and skill at handling concepts or problems in a particular discipline...The process of keeping students mentally, and often physically, active in their learning through activities that involve them in gathering information, thinking, and problem solving. (p. 5)

Therefore, instructors who tend to use active learning strategies are the ones who promote specific active learning features in their students' learning. They incline to engage learners in meaningful active tasks instead of solely transmitting information, provide the learners with the opportunity to bring their learning into reality, prompt instant feedback, enhance the learner's critical thinking, and promote peer and class collaboration. For instance, Kim, Sharma, Land and Furlong (2013) designed active learning modules to enhance students' critical thinking. To achieve that goal, the authors planned three active learning strategies, namely, "small-group learning with authentic tasks, scaffolding, and individual writing" (p. 230). Findings showed a development in the students' average critical thinking level. This implies that the active learning strategies could promote students' critical thinking.

Other scholars claimed that the adoption of Bloom's Taxonomy would promote students' active learning. The effective use of Bloom's Taxonomy could assist instructors to

deliver the class and textbook materials in a meaningful and engaging approach that would maximize the learners' understanding, synthesis and evaluation (Weigel & Bonica, 2014). Further, it requires students to go beyond memorization by promoting their cognitive thinking to develop skills that require remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001).

Learning is by nature an active process and students' learning is not straightforward. Learners tend to learn differently (Meyers & Jones, 1993). In fact, humans are curious by nature as can be clearly seen in children who try hard to explore and make sense of the environment surrounding them. Therefore, instructors are expected to promote the learners' curiosity, spontaneity, and feed them through adopting strategies that encourage students to enthusiastically make sense of the subject matter by relating learning to the learners' prior experiences, the real world, families, cultures and communities (Dewey, 1899; Nesin, 2012). These strategies should include "problem-solving exercises, informal small groups, simulations, case studies, role playing, and other activities, all of which require students to apply what they are learning" (Meyers & Jones, 1993, p. xi).

Some other studies have shown that it can be more effective to teach using different active learning strategies than by using traditional teacher-centered pedagogies (Bojinova & Oigara, 2011; Michael, 2006). For instance, Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt and Wenderoth (2014) conducted a meta-analysis on 225 studies comparing active learning with traditional lecture. Findings showed that active learning is superior to traditional methods of teaching. Active learning strategies increased the students' test scores by 6% and decreased their failure rates by more than 50%. Additionally, Michael (2006) assessed various active learning methods and confirmed that active learning is one of the pedagogies superior to traditional teaching.

In a similar context that reflects on the use of active learning and clickers at the same time, Martyn (2007) questioned whether the use of clickers or active learning strategies had the greatest impact on students' learning outcomes. To reach an answer, the author introduced clickers as an active learning method to one group of students and she encouraged class discussion as a different active learning method with the other group. The analysis of pre- and posttest data that compared the learning outcomes of the two groups showed that the group that used clickers slightly outperformed the group that used class discussions. However, statistical analysis revealed no significant difference in the outcomes of the two groups. Different studies show that classroom approaches that actively involve students result in noticeably better learning than lecturing does.

However, many researchers claim that there are many barriers to active learning (Crews, Ducate, Rathel, Heid & Bishoff, 2011). For instance, Michael (2007) found out that faculty have different perceptions of barriers to active learning. She classified these barriers to “student characteristics, issues directly impacting faculty, and pedagogical issues” (p. 43). Michael believes that understanding teachers’ perception of the barriers would make them embracing active learning in the classroom. Similarly, Geske (1992) thinks that one of the teachers’ greatest barriers to active learning exists in teaching in large classrooms that would disengage students’ from class participation. In such large classes, students might not know one another and that would increase the students’ concerns to verbally participate in classroom activities.

In order to eliminate one of the above-mentioned barriers, the large classrooms barriers and increase students’ active learning, Crews, Ducate, Rathel, Heid, and Bishoff (2011) recommended the use of SRS in the classrooms. The researchers conducted a study that involved four faculty members and 64 students as research participants, examining their perception about the effectiveness of students’ response system in their courses. Findings showed that students perceived the use of SRS technology positively as it increased their engagement “due to hands-on interaction” (p. 5). Furthermore, the four faculty who used the SRS reported their use of the tool as an active learning method encouraged students’ participation, facilitated peer discussions, engaged the students into the learning process and assisted them in learning new terminologies.

Many research studies have used SRS to explore their usefulness within the educational field. However, the review of the relevant literature shows that several gaps emerge. First, none of these studies explored English as second language learners’ perceptions of the use of *Socrative* in the classroom. Second, none of the previous studies incorporated the use of *Socrative* with the active learning approach to teaching ESL learners. Thus, to address these two gaps, the current study incorporates *Socrative* with some practical activities to promote students’ active learning and to explore English second language learners’ (ESL) perceptions of the use of *Socrative* as an educational tool.

4. The study

The selected SRS, *Socrative*, was integrated into reading comprehension class activities to increase students’ engagement and examine their perception of incorporating SRS in a classroom setting. Other different educational technology tools such as Breaking News English on iPads were also implemented to increase the students’ digital literacy and to

prepare them for college demands; nevertheless, a special focus was given to the use of the SRS.

4.1. Participants and the research context

The context of the study was an intensive English program in the United States of America. The program's classrooms were equipped with a TV, computer, document camera, and projector. iPads were available upon request. Also, a computer lab at the university was assigned to the program for instructors to use with their students when needed.

The participants of the study were 14 international students. They were learning English as a second language to improve their language proficiency skills and to enroll as undergraduate students at one of the U.S. public universities. Their age ranged from 18 to 20. They all had a different linguistic and cultural background – the majority were Chinese, Vietnamese, and Middle Eastern students.

4.2. Procedures

4.2.1. Activities facilitating independent and collaborative critical thinking

The kinds of SRS activities that were used to promote the ESL students' critical thinking, engaged students in higher-order thinking both individually and collaboratively and they were usually followed with a meaningful and enjoyable classroom discussions. In case-based problem-solving exercises, students developed their analytical skills and brought theories to the real world and transferred their previous skills into different contexts. For instance, students were engaged in a range of problem-solving thinking activities that required them to use their analytical skills to come up with a solution. Within such activities, the researcher tried to bring problems from different cultural backgrounds. In the following example, an activity that is from the Arabic heritage was used.

Once upon a time, there was a man who wants to cross a river with a sheep, hay, and wolf and reach to the other side. However, his boat is small and it can only carry one thing at a time. As you know, if he leaves the wolf with sheep, the wolf will eat the sheep, and if he leaves the sheep with hay, the sheep will eat the hay. What can he do? Can you, as a team, think and decide which of the three things the man should carry first and leave on the other side?

- a. Wolf
- b. Sheep
- c. Hay

To respond to this activity effectively, students were divided into groups of three and were given the freedom to discuss their solutions in or outside the classroom setting. Each group was assigned a name, so the students could know which team chose the right answer and would win a treat as an incentive. Following solving the problem, the whole class got involved in a meaningful discussion and a reflection about how each group reached that specific solution. After interviewing the students, all of them reported that *Socrative* activities encouraged them to interact and think more critically and collaboratively. Most of the students reflected that the use of such activities using *Socrative* made learning more fun and gave them the opportunity to work collaboratively and competitively.

4.2.2. Activities facilitating different teaching styles and course feedback

Instructors who teach English as a second language to international students are the ones who are more aware than any other instructors of the many obstacles that would face when trying to meet the needs and wants of all of their students who are from different cultural and linguistic backgrounds. As a platform, *Socrative* worked wonders with students who feared conferencing and yet would like to share their opinions frankly. This software can provide instructors with the opportunity to gather their students' feedback anonymously and hear from them about the kinds of class activities that they like the most, express their learning style that is desired freely, and provide the teacher with everyday evaluation. Some students commented that one of things they liked about using *Socrative* is their ability to answer without the fear of having their names attached to the wrong answer, encouraged them to keep trying. It also motivated some Chinese students who used to be silent most of the time to have a voice in the class during and after using the SRS.

4.2.3. Activities facilitating instant feedback

An interesting feature that is attached to the SRS and is important for the active learning of instructional strategies is its capability to provide students with instant feedback. Providing students with instant feedback is hard to accomplish in large classroom contexts. However, with the use of SRS (*Socrative*), instructors are able to provide their students with instant feedback in an innovative, effective and efficient way. Students perceived the feature of prompted feedback as priceless. They believed that there was nothing like the instructor's real time and clear explanation when a student chooses the incorrect answer. Also, when the screen displayed the correct responses, one of the students commented, "I will never forget the feedback that I got for my wrong ones [answers]. I will always see them and avoid them."

5. Reasons for using Student Response System in the classroom

1. Students' academic engagement leads to academic success. The use of SRS (e.g., *Socrative*) would increase students' engagement.
2. It is important that each student should have a voice in the class and share his/her opinion regarding the course content. The use of SRS (e.g., *Socrative*) would provide shy and less involved students (e.g., some Asian students) with the opportunity to have a voice during the class.
3. Critical thinking and collaboration are two of the most important 21st century skills that most of the Common Core State Standards emphasize. The effective use of class tasks with SRS could promote these two skills.
4. SRS (e.g., *Socrative*) has become more accessible and efficient to use. Language teachers should take advantage of it.
5. SRS (e.g., *Socrative*) is an effective tool that can provide ESL students with instant feedback and help the teacher to evaluate students' understandings of the subject matter.
6. With the use of SRS (e.g., *Socrative*), language teachers can set up students' responses as anonymous. Doing so would encourage even more hesitant students to respond without the fear of embarrassment or intimidation in case their answers were not right.
7. *Socrative* as a SRS can be used as an assessment tool inside and outside the classroom confines.
8. The use of SRS can meet the passion of the tech-savvy new generation and, if it is used efficiently and effectively, it can break up the dullness of traditional classroom settings (Johnson, 2005).

6. Conclusion

There is no doubt that most teachers care about their students' learning; however, a devoted teacher should also care about his/her students' perception of the course content and the tasks that support the course outcomes. Teachers need to ask themselves if they want their students to leave the class with positive and encouraging attitudes. If they want their students to feel positive toward the subject matter they teach, and their learning experiences, then, they need to consider the use of various educational technology tools and instructional approaches that would promote those positive attitudes. SRS is one of these tools that has shown to be effective in positively impacting the ESL students' learning experiences during classes. The students perceived the selected SRS, *Socrative*, as a valuable tool that facilitated their critical

thinking, encouraged their effective collaboration, and engaged them into the learning process. They developed a favorable attitude towards using it and expressed their desire to use it throughout the course activities. They had even expressed their desire for it to be used by instructors in other language classes.

As a limitation, the current study did not examine the students' language learning achievement regarding the use of the SRS. Its main goal was to explore ESL students' perception of the integration of SRS during language classes with the support of active learning activities. The tool sounded effective in engaging students into the learning process, prompting their higher thinking order skills, and enhancing the ESL students' collaboration.

The use of SRS requires language teachers to devote more time to prepare the activities and set them up on the software. To do so, language teachers' perceptions of integrating technology into classroom settings and their willingness to adopt the student-centered approach need to be considered. Language teachers need to be trained on how to integrate this tool effectively and efficiently in different ways so that they can perceive it as easy to use and embrace its relative advantages.

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