Introducing Socrative as a Tool for Formative Assessment in Saudi EFL Classrooms

Ameera Saeed Alharbi
English Language Center, Umm Alqura University
Makkah, Saudi Arabia
English Language Institute, King Abdulaziz University
Jeddah, Saudi Arabia

Zilal Meccawy
English Language Institute, Kind Abdulaziz University
Jeddah, Saudi Arabia

Abstract
As one of the most popular Online Student Response Systems (OSRSs), *Socrative* is defined as a web-based platform that can be accessed using any browser that is connected to the Internet (Mork, 2014). In an attempt to guide EFL teachers on their journey towards transforming their traditional paper-based formative assessment into using electronic tools, this study seeks to present the expectations and attitudes of Saudi female learners towards the use of mobile-based formative assessment. The study aims to investigate the attitudes of EFL learners towards the use of mobile-based tests in English classes using *Socrative* as a model for assessment. For this purpose, 35 female students completed all three stages of the experiment; initial survey, *Socrative* quiz, post-experiment survey. The participants are enrolled in one of the courses of English for Specific Purposes (ESP) offered by the Preparatory Year Program at a Saudi state university. The findings of the study indicate that almost half of the participants preferred paper-based over mobile-based tests in the pre-experiment survey; after the experiment, however, the students changed their preferences in favor of mobile-based tests. The study also highlighted different advantages, reported by the participants, of using *Socrative* as a tool for formative assessment in EFL classrooms. The study recommends that teachers implement the use of (OSRSs) in their classrooms as they have many pedagogical benefits for language learners.
Keywords: EFL classroom formative assessment, mobile-based testing, paper-based testing, *Socrative*, Online Student Response Systems (OSRSs).

Introduction

With the increasing technological developments and the young generation growing so attached to their smartphones, it becomes essential to find more innovative and engaging tools in classroom formative assessment to teach English as a Foreign Language (EFL). In the year 2020, the world has come face-to-face with the challenge of finding alternatives for synchronous teaching, communication, and assessment while keeping physical distancing due to the COVID-19 Pandemic. Tools for Mobile Assisted Language Learning (MALL) are inevitably needed during this time of crisis. Among these tools, one that holds promising and up-to-date potentials- *Socrative*- is chosen for formative classroom assessment in this study. When used as a tool for testing, students can access *Socrative* using their mobile phones. In the present time, Yarahmadzehi and Goodarzi (2020) note that "because of their flexibility, size and capacities, mobile phones are beginning to replace computers" (p.181). Compared to paper-based testing, mobile-based testing is more eco-friendly since printing hundreds of test sheets is no longer needed. Besides, mobile-based testing is more user-friendly than Computer-Based Tests (CBT) because mobile phones are more readily available and affordable.

However, mobile-based testing is not commonly used in Saudi Arabia; therefore, many Saudi EFL learners are not familiar with this technology in an educational context. In order to integrate mobile-based testing effectively in EFL classrooms, it is necessary to present teachers with a clear vision of learners' attitudes and expectations of this possible change in classroom formative assessment. The importance of this study is in its attempt to track the impact of first experiences with mobile-based testing on Saudi EFL learners who have never experienced formative assessment using their smartphones. As a result, the findings of this study can be used as a base for EFL educators to successfully integrate mobile-based formative assessment in classrooms. The current study introduces *Socrative* to learners as a replacement for paper-based formative class assessment only; using *Socrative* as a replacement for summative assessment tools such as paper-based tests or Computer-based Tests (CBT) is not considered in this research.

As one of the most popular Online Student Response Systems (OSRSs), *Socrative* is defined as a web-based platform that can be accessed using any browser that is connected to the Internet (Deichman, 2014; Luxton, 2019; Macglynn & Kelly, 2017; Mork, 2014). The focus of this study is on the expectations and attitudes of EFL learners who have never used (OSRSs) in language assessment. In this pre-and-post-experiment design study, *Socrative* is used as a formative assessment tool in an ESP (English for Specific Purposes) course offered by a state university in Saudi Arabia for business students. The current study aims to investigate the attitudes of EFL learners towards the use of OSRSs in language classes using *Socrative* as a model for assessment. For this purpose, the current study answers the following research questions:

1- What are the attitudes of Saudi EFL learners towards the use of mobile phones in language formative assessment?
2- What are the changes in Saudi EFL learners' attitudes after experiencing *Socrative* as a tool for language formative assessment?

Literature Review

Recently, the number of studies that examined the implementation of (OSRSs) has increased considerably due to the advances in information technology. Some researchers tested the use of *Socrative* for pure assessment purposes, and others sought to highlight the effectiveness of this electronic tool in enhancing cooperative learning and students' in-class engagement. This section reviews different studies investigating students' perceptions and attitudes towards the use of *Socrative* in their EFL classrooms and its impact on their assessment and learning performances.

In several studies, students who experienced using *Socrative* for test-taking, as well as in-class activities, perceived these experiences positively (Abdulla, 2018; Awedh, Mueen, Zafar, & Manzoor, 2014; Balta, Perera-Rodríguez, & Hervás-Gómez, 2018; Guarascio, Nemecek, & Zimmerman, 2017; Ohashi, 2015; Yoon, 2017). The data collected using surveys by Balta et al. (2018), Awedh et al. (2014), and Abdulla (2018) showed positive attitudes towards using *Socrative* to support class learning and test achievement. These studies also highlighted the advantages that *Socrative* proposed to users over other training and testing tools, including enhancing motivation and engagement of the learners in EFL classes. Similarly, Ohashi (2015) implemented the use of *Socrative* to improve EFL students' writing performance and, as a result, received positive feedback from the participants. Yoon (2017) concluded that *Socrative* changed students' attitudes towards the learning of English, where the initial survey showed that the participants lacked interest in their English classes; however, after implementing *Socrative*, the students became more interested and had more positive perceptions in the post-experiment survey. When students' class assessment is not graded, Yoon (2017) proposed allowing students to hide their names to provide them "with a sense of anonymity and safety in order to promote participation, freedom and creativity in answers, and reduce anxiety about being wrong" (p.55). The participants in the previously discussed studies favored *Socrative* for class learning and assessment because it enabled anonymous login, immediate feedback, and both individual and group access (Abdulla, 2018; Awedh et al., 2014; Balta et al., 2018; Ohashi, 2015; Yoon, 2017). In addition, a study conducted by Guarascio et al. (2017) reported not only positive perceptions of *Socrative*, but also a preference for using it as an assessment and training tool over another Student Response Systems (SRSs) tool called "*TurningPoint.*"

In a comparative study, Mohamad, Lestari, Zahidi, and Matore (2019) investigated the perceptions of both learners and lecturers after experiencing the use of *Socrative,* which resulted in contradictory opinions. The researchers concluded that the learners found *Socrative* useful, encouraging, and effective in their EFL learning. The students highly benefited from the feature of adding explanations to the quiz items because it aided their understanding of the grammatical rules and "enhanced their English competency" (Mohamad et al., 2019, p.146). However, the students reported some issues related to the availability of the internet in the classroom (Mohamad et al., 2019). The researchers in the aforementioned study presented the perceptions of only two lecturers against thirty-four students; both lecturers disapproved of the usefulness and effectiveness of *Socrative* in EFL classrooms. The focus of the current study is on learners; therefore, further discussion of instructors' perceptions is not considered in this review of the literature.

Similar to the focus of the current study, two studies by Chou, Chang, and Lin (2017) and by Yarahmadzehi and Goodarzi (2020) sought to investigate learners' perceptions while comparing mobile-based tests using *Socrative* to paper-based tests in language classrooms. The results of these studies indicated positive attitudes towards the use of mobile phones for formative assessment. In both studies, participants reported some advantages of using *Socrative* over paper-based tests, including better engagement in tasks and higher motivation. Furthermore, the participants of both studies described the experience of using *Socrative* in EFL formative assessment as entertaining and expressed their desire to use *Socrative* for formative assessment in other courses, too. Learners' feelings and attitudes were essential in promoting their performance as Yarahmadzehi and Goodarzi (2020) explained that enjoyment allowed students to "meet certain standards and be aware of the main purpose of their lessons" (p.191). According to Yarahmadzehi and Goodarzi (2020), immediate feedback and quick answers were two advantages that the students appreciated the most. These features played an important role in motivating learners to be more active in learning (Yarahmadzehi & Goodarzi, 2020). In the same sense, Chou et al. (2017) found that the main reason behind participants' high engagement in learning was their feelings of curiosity towards this new tool of assessment. The only difficulty *Socrative*-users faced was related to accessing the application in class (Chou et al., 2017; Yarahmadzehi & Goodarzi, 2020).

On the other hand, some studies presented either negative perceptions or unexpectedly low acceptance of *Socrative* in EFL classrooms (Balta & Tzafilkou, 2019; Pérez Garcias & Marín, 2016; Turan & Meral, 2018). When comparing *Socrative* to *Kahoot!*, Turan and Meral (2018), concluded that *Kahoot!* surpassed *Socrative* in terms of students' satisfaction and engagement. Wang (2015) differentiated between Student Response Systems (SRSs) such as *Socrative* and Game-based Student Response Systems (GSRSs) such as *Kahoot!* in the sense that the latter involved "the creation of energy and engagement by using gamification" (as cited in Turan and Meral, 2018, p. 107). The gaming nature of Kahoot! reduced students' anxiety far more than *Socrative*. In the same sense, Balta and Tzafilkou (2019) concluded that the participants in their study were not as interested as they expected in using *Socrative*, and there were no differences in perceptions across different genders and different language proficiency levels. However, differences in major had some minor effects on the results, which the researchers attributed to curriculum difficulties. Furthermore, limited experience with mobile-based tests had an impact on students' perceptions according to Pérez Garcias and Marín (2016). The type, difficulty, and nature of the items presented to students through *Socrative* played an important role in changing their perceptions and learning engagement in the previously discussed studies (Balta & Tzafilkou, 2019; Pérez Garcias & Marín, 2016; Turan & Meral, 2018).

Similar to the study conducted by Turan and Meral (2018), Kim (2019) tested the effectiveness and learners' attitudes towards both *Socrative* and *Kahoot!* in EFL classes. According to Kim (2019), *Kahoot!* was defined as "a free game-based learning platform that can be used to create various formative assessments such as online quizzes, surveys, and discussions" (p.61). The researcher concluded that although the results of the grammar formative assessment were not significantly higher than paper-based quizzes, the participants perceived both *Kahoot!* and *Socrative* positively. Both *Socrative* and *Kahoot!* were more advantageous in teaching grammar than traditional paper-based activities because they allowed for more "active involvement in class

and motivation to learn" (Kim, 2019, p.70). Based on the results of the survey, Kim (2019) concluded that the group who experienced *Kahoot!* showed more interest and engagement in learning grammar than the one who experienced *Socrative* and attributed this finding to the gaming nature of Kahoot! that creates an atmosphere of competition and fun. Nevertheless, *Socrative* was found more advantageous than Kahoot! due to its well-perceived features that included immediate feedback and anonymity (Kim, 2019).

In a study conducted by Waluyo (2018), *Socrative* was used in formative language assessment, and the findings illustrated that *Socrative* could be a useful tool not just in assessment but also in students' progress. The researcher used ten *Socrative* quizzes to assess the vocabulary acquisition of 136 English Language students, and to help students monitor their progress. Taking advantage of the instant feedback feature, the students could detect their weaknesses and strengths, learn from their tests, and consequently improve. However, the study resulted in noticeable differences in students' achievements and engagement due to their different proficiency levels. According to Waluyo (2018), the acceptance of *Socrative* and the learning progress of intermediate students were more significant than beginners. This result contradicts the findings of Balta and Tzafilkou (2019), discussed earlier, who did not report any effects of students' proficiency level on their class engagement and perceptions of *Socrative*.

Based on the studies discussed in this review of the literature, the efforts of different researchers, who investigated the perceptions of students after implementing the use of mobile-based formative assessment in EFL classrooms, covered various aspects of new tools such as *Socrative*. However, there are limited studies that tackle the learners' readiness to accept the use of mobile-based tests, particularly *Socrative*, as an alternative formative assessment tool that might one day replace paper-based tests. It is also worth mentioning that in the local context of this study, Saudi universities and other educational institutions are now moving towards replacing paper-based tests with automated tests such as computer-based tests (CBTs). Therefore, it is crucial to investigate the perceptions, expectations, and preferences of the Saudi EFL learners in case their teachers start switching to mobile-based tests in classroom formative assessment. Now in the year 2020, the world is experiencing a global pandemic that has transformed many educational practices to complete reliance on distance online learning. One of these practices is related to classroom formative assessment, where the need for a tool that requires less physical contact between teachers and students is vital. This need draws our attention to the potentials of smartphones in supporting the educational systems that have been neglected for a long time.

Methodology

The experiment took the form of a pre- and post-experiment design, where the participants answered a pre-experiment survey about their attitudes towards the use of mobile phones in their language assessment. After that, the participants responded to a post-experiment survey about their new perspectives after experiencing *Socrative* for the first time. The qualitative data obtained from both surveys were analyzed thematically, and the categories that emerged based on the existing responses were presented as descriptive data in the form of percentages.

Participants and Context

Among the 47 students enrolled in two groups in the Preparatory Year Program at a Saudi state university, only 35 have completed all three stages of the experiment. The participants were all female students in the Administrative Track. They were between 18-20 years old, and their native language was Arabic. Techniques of "homogenous sampling" were employed in this study, where participants from different subgroups share similar characteristics and learning experiences (Dornyei, 2007). They were chosen for this experiment because they have never experienced using mobile phones in language assessment. The level of their English Language proficiency at the time of the experiment was (B1) since they have passed two achievement tests of extensive (A2 & B1) courses in English for General Purposes (EGP) in their first semester in order to be qualified for an ESP course. This (B1) level is equivalent to an intermediate level according to the descriptors of The Common European Framework of Reference for Languages (CEFR) (Woodrow, 2018). The course delivered to the participants at the time of the experiment during the Spring semester in (2019) was Business English. The number of weekly contact hours was sixteen; all hours were given in face-to-face sessions in-campus.

Research Instruments

This experiment was conducted using three tools: a pre-experiment survey, a *Socrative* quiz, and a post-experiment survey. Each survey contained two open-ended questions, which were translated into the native language of the participants (Arabic) to ensure comprehension. The pre-experiment survey asked about students' expectations and preferences of two test modes (mobile-based or paper-based tests). The second survey asks about students' descriptions of their experiences and whether their opinions regarding mobile-based tests have changed or not (see Appendices A and B). Both electronic surveys were sent to the participants via email. The *Socrative* quiz contained ten multiple-choice items which covered the vocabulary and the grammar of the first five units of the students' textbook; *Commerce 2*. The design of the quiz enabled some *Socrative* features, such as instant feedback, picture clues, explanation, and total score display (see Figures one, two, and three).

Figure 1. Socrative instant feedback and explanation features

After each answer, the test-takers received instant feedback and knew whether they have answered correctly or not, and which option was the correct answer. Some feedback notes included an explanation (Figure one) to help the students learn while taking the test. In addition,

the *Socrative* quiz used in the experiment included some picture clues (Figure two) to help students understand the questions better and choose the correct answer.

Figure 2. Socrative picture clue feature

At the end of the test, a screen displaying the total score of the test-taker (Figure three) allowed students to monitor their progress and find out how well they have achieved in their tests. The students did not need to wait for their teachers to mark their answers.

Figure 3. Socrative total score display feature

Procedures

The English instructors of both groups approved of the experiment and cooperated in facilitating the communication between the researchers and the students. After designing the *Socrative* quiz and translating the questions of the two surveys into Arabic, a pilot study was conducted on seven university students who experienced all three stages. Based on the results of the piloting study, quiz items and survey questions were revised. The participants, who have voluntarily agreed to join this study, were asked to choose nicknames to enable the researchers to identify the students who completed all three stages of the experiment (see Figure four). Only the responses of the students whose nicknames appeared on both surveys and the quiz were included in the data for this study. Data of students who missed one or more of the stages were excluded because they did not achieve the purpose of the study; identifying EFL students' attitudes before and after experiencing mobile testing. The whole experiment was carried out online using emails and the *Socrative* Application.
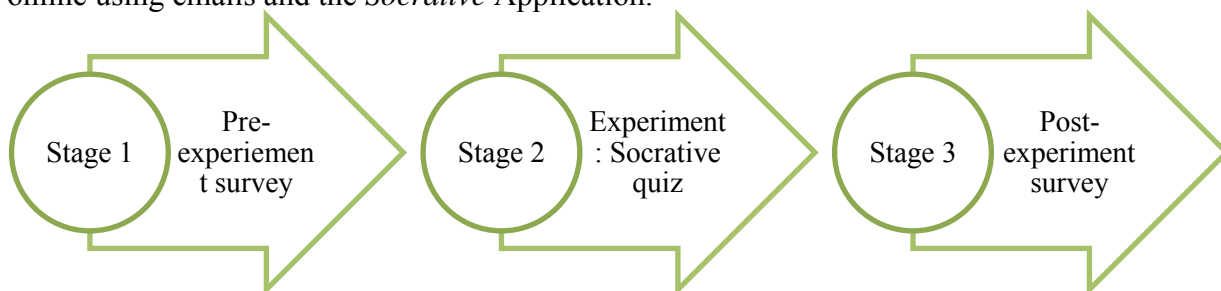
| Stage 1 | Pre-experiment survey | Stage 2 | Experiment : Socrative quiz | Stage 3 | Post-experiment survey |

Figure 4. Stages of the experiment

After the participants completed the initial survey, they logged into the *Socrative* quiz that was accessible for six hours specified by the participants themselves. Immediately after the students finished the quiz, they received a link via email to complete the second electronic survey. The quiz results and data collected from both surveys were matched based on the participants' nicknames. It was revealed that only 35 out of 47 participants had completed all three stages of the experiment. Therefore, only the responses of these 35 participants were translated into English and used as data for the current study. Descriptive analysis of the qualitative data obtained from the surveys was used to present the results.

Results

The responses of the participants in the pre-experiment survey showed different attitudes towards the use of mobile-based language tests. Figure five summarizes the students' responses before experiencing the *Socrative* quiz regarding their expectations of mobile-testing being as simple and effective as paper-based testing.
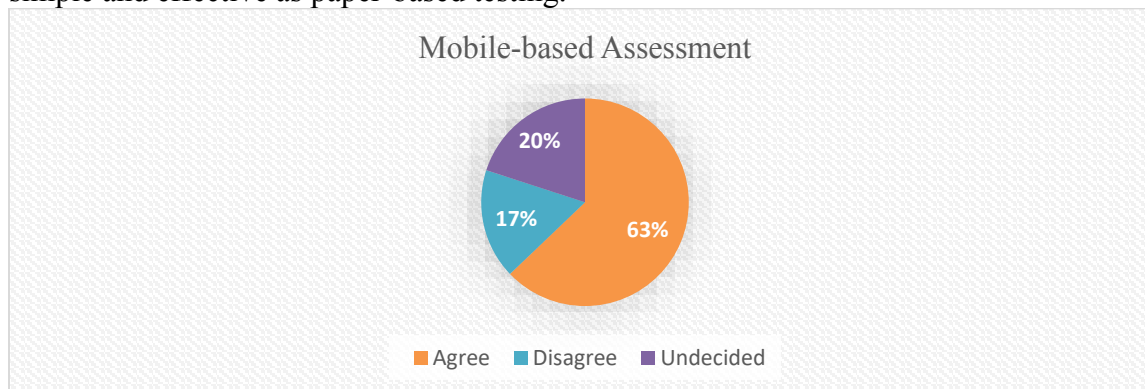

Figure 5. EFL learners' expectations of mobile-based testing (pre-experiment)

The results indicated that more than half of the participants (63%) agreed that using mobile-based tests would be simple and effective. They used phrases like "yes," "of course," "I think it will be the same," and "I don't see much difference if the questions are the same." On the other hand, (17%) of the participants disagreed and thought that paper-based tests were easier than mobile-based tests. Several students explained that they "are used to paper-based tests," and some said that they "do not want to read English from a screen." Up to (20%) remained undecided, saying that they do not know because they have not experienced any form of mobile-based testing.

Regarding the responses to the second question in both surveys, where students choose between mobile-based testing and paper-based testing, it appeared that the participants favored both paper-based and mobile-based tests almost equally in the pre-experiment survey (see Figure six).
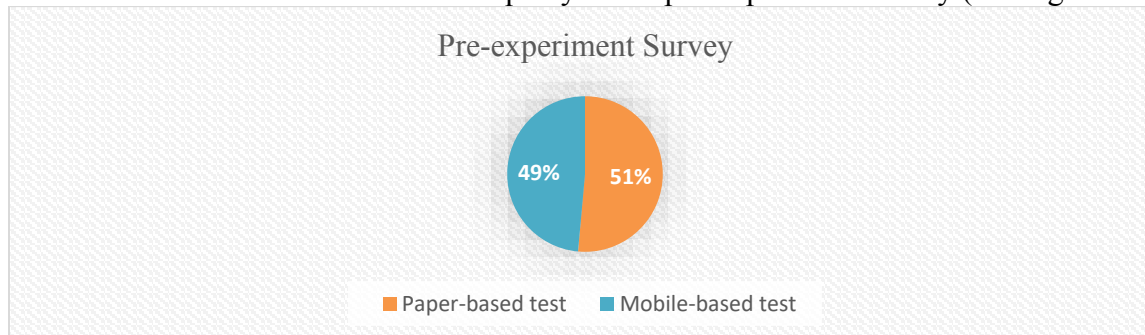

Figure 6. Students' preferences in the pre-experiment survey

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However, there was a significant change in the students' preferences after they experienced *Socrative* for testing as indicated in Figure seven. Up to 77% of participants preferred mobile-based tests over paper-based tests in the post-experiment survey, whereas 17% preferred the traditional paper-based tests over mobile-based tests, and only 6% remained neutral.
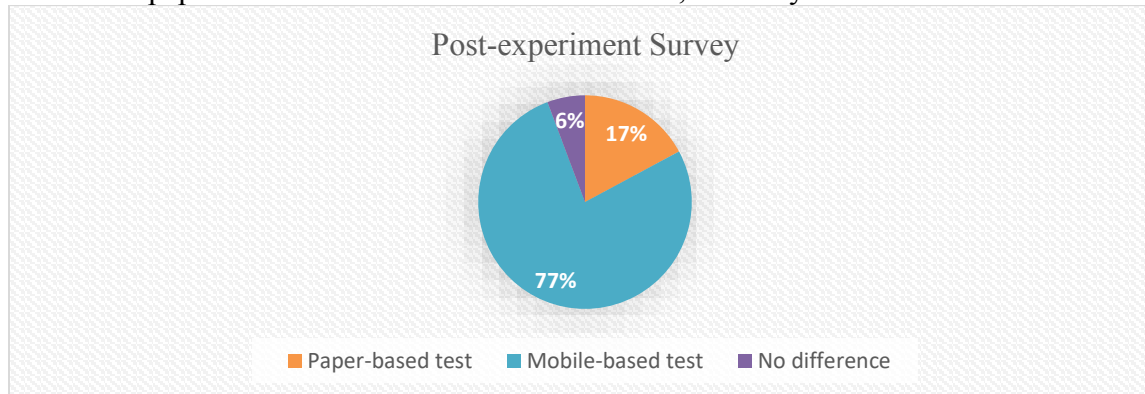

Figure 7. Students' preferences in the post-experiment survey

Another finding of this study is related to how the participants describe their first experiences of mobile-based testing. The majority of students describe this experience positively as indicated in Figure eight.
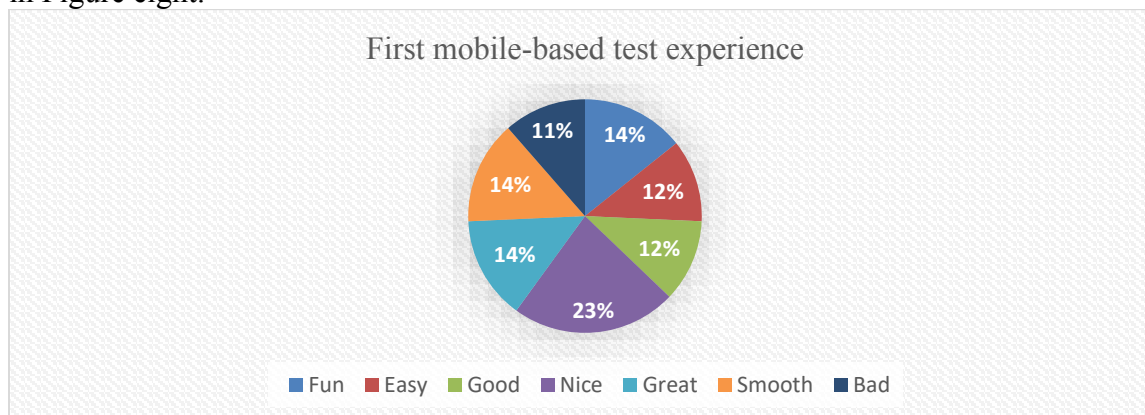

Figure 8. Students' descriptions of their first mobile-based test experience

It appears that the word 'nice' was used more than others to describe students' first mobile-based testing experience, while concepts such as 'fun,' 'great,' and 'smooth' were used equally by up to 14% of participants. Other words like 'easy' and 'good' were also used by around 12% which is a similar percentage to the word 'bad;' the only negative word used to describe the first experience of mobile-based testing.

Discussion

The aim of this study is to investigate students' attitudes towards the use of mobile-based tests in formative language assessment and to investigate the effect of their first experience of *Socrative* on their attitudes towards the use of mobile-based testing. Understanding learners' attitudes and preferences has great influence on their acceptance of mobile-based testing tools which, in turn, affects their academic achievement (Balta et al., 2018). The descriptive analysis of the

participants' responses answers the research questions. Generally, the participants had positive attitudes before they experienced the use of mobile-based tests, which can be attributed to the fact that they have experienced different mobile applications, especially social media applications, and that they expected this new experience to be as smooth. This conclusion is supported by Yoon (2017), who used an initial survey before the experiment and found that although the participants had negative attitudes towards learning English, they showed interest in interacting with their classmates and instructor through *Socrative*.

Before the experiment, participants in this study were reluctant to choose mobile-based over paper-based testing because they were used to the traditional paper-based tests. They were intimidated to try new test administration modes considering that tests usually cause stress for most students. This result is in line with the findings of Chou et al. (2017) and Pérez Garcias and Marín (2016) who also explained that the participants in their studies were uncertain regarding the effectiveness and possibilities of *Socrative* tests even though they preferred mobile-based tests over the traditional paper-based tests. After the experiment in this study, the students felt more at ease probably because their real identities were not exposed during the test since they used nicknames. Ohashi (2015) found similar results when the students replied that anonymity had encouraged their active participation. Another interpretation of this change in participants' attitudes could be attributed to the additional features of *Socrative* where questions are augmented with pictures, clues, and explanations. This corresponds with the findings of Waluyo (2018), which indicated that mobile-based testing tools such as *Socrative* can promote learners' academic achievement and facilitate teacher's reliance on formative assessment.

The significant changes in students' preferences pre- and post- the experiment are attributed to the testing tool, *Socrative*, used in the experiment itself. They described it using positive terms because it includes testing features that are not found in the traditional paper-based tests; such as instant feedback, picture clues, answer explanation, and total score display. Similar to the participants of Ohashi (2015) and Guarascio et al. (2017) who referred to *Socrative* as useful, enjoyable, and easy; the satisfaction of the students in this study is projected on the positive words they used to describe their first mobile-based testing experience. Such descriptions included words like 'nice,' 'smooth,' 'fun,' 'great,' 'easy,' and ''good,' which are similar to the words 'easy' and 'attractive' used by the participants in the study conducted by Yarahmadzehi and Goodarzi (2020). This finding, on the other hand, contradicts the results of Turan and Meral (2018) whose participants experienced more anxiety with *Socrative* compared to *Kahoot!* and preferred game-based OSRSs like *Kahoot!* over non-game-based OSRSs like *Socrative*. Similarly, Kim (2019) found that the participants who experienced *Kahoot!* reported higher preference for this tool compared to *Socrative* users due to the gamification feature found in the former.

The analysis of the qualitative data resulted in other findings that emerged when the students attempted to compare mobile-based tests to paper-based tests to justify their preferences. For example, students who favored mobile-based tests listed some advantages that included saving time (since they did not have to bubble answer sheets), reducing test anxiety, instant feedback, better chances for translating unfamiliar words, display of final score, user-friendliness (since the test is available to take anywhere), and finally better focus (since the screen displays only one question at a time). Abdulla (2018) highlighted similar advantages of using *Socrative* and related

them to the success of the study experiment. In the same sense, Awedh et al. (2014) and Mohamad et al. (2019) concluded that, being smooth and comfortable to use, *Socrative* is a perfect tool to increase students' motivation and engagement. In addition, Balta and Tzafilkou (2019) listed 'saving time' and 'instant feedback' among the most preferred advantages of using *Socrative* in formative classroom assessment.

Although the participants of this study had positive attitudes towards mobile-based testing, some reported a few issues related to Internet access, battery life, and minimizing on-screen time. This finding corresponds to the results of Yoon (2017) whose participants reported issues related to technology use in the classroom. Besides, the participants in the current study, who preferred paper-based to mobile-based tests, explained that they found paper-based tests more reliable since they did not have to worry about technical issues such as difficulties in logging into the quiz room or running out of battery life. To overcome these challenges, teachers can avoid such issues once they point out to students that they need to bring fully charged mobile phones to class, and allow them to log into *Socrative* at the beginning of the class to save time (Ohashi, 2015). Also, teachers are recommended to control the flow of the class and the distribution of time between teaching and *Socrative* activities if they find that students get distracted by their devices (Guarascio et al., 2017). In fact, *Socrative* has a feature that enables the teacher to control the transition between test items, which can be very beneficial in case teachers wanted to limit quiz time or prevent their students from using any supportive applications such as electronic dictionaries. Yoon (2017) suggested that technical issues can be dealt with if teachers use pair/ group work and enable mobile phone sharing.

Conclusion

To conclude, Saudi EFL students' first experiences of *Socrative* were generally found to be positive, encouraging, and supportive for language assessment. There was a noteworthy change in students' attitudes towards the use of mobile-based tests pre- and post- the experiment. The advantages of using mobile-based tests reported by the students far surpass the disadvantages, which are not more than a few technical issues that teachers can easily overcome. EFL teachers, who are willing to use technology for formative assessment in class, are recommended to use OSRSs like *Socrative* because it has various useful features. Furthermore, *Socrative* has a more serious layout that sets test-like mood unlike other game-based OSRSs such as *Kahoot!* For future research, this study can be replicated during real class time with a larger number of participants. A comparative study of the attitudes of both female and male students can bring more insights into EFL learners' readiness for mobile-based testing. Future researchers are also advised to test other features of *Socrative* that facilitate in-class interactions such as 'Space Race,' and the latest update of *Socrative* in 2020 includes more useful features that support online distance learning. Now that the majority of students around the world have better experiences of e-learning tools including *Socrative*, it is essential to conduct more research to investigate its effectiveness as a replacement for paper-based formative assessment.

About the Authors:
Ameera Saeed Alharbi is currently a lecturer at the English Language Center in Umm Alqura University in Makkah, Saudi Arabia. She holds a Master's Degree in English Literature and is currently enrolled in a program for a second Master's Degree in TESOL. Her research interests

include contemporary English fiction, e-learning, and technology in language teaching. https://orcid.org/0000-0001-5617-9431

Dr Zilal Meccawy is an Assistant Professor at the ELI. She holds a BA in English Language & Literature from KAU, an MA in Renaissance & Romantic Literature from the University of Liverpool and a PhD from the University of Nottingham. Her research interests are language assessment, bilingualism, and technology in education. She supervises the PD Unit and teaches both Preparatory Year and MA students. https://orcid.org/0000-0003-4080-7565

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Appendix A
Pre-experiment survey questions
1- Do you expect using mobile-based English Language tests would be as simple and effective as paper-based tests? Why?
2- In your opinion, which one will be easier and more effective to use for your class quizzes: paper-based tests or mobile-based tests? Why?

Appendix B
Post-experiment survey questions
1- Now after experiencing the use of mobile-based English Language test through *Socrative*, how would you describe this experience?
2- In your opinion, which one is easier and more effective to use for your class quizzes: paper-based tests or mobile-based tests? Why?