

**Using Socratic SRS- Based Assessment to Improve EFL
Reading Comprehension Skills of Online Texts for University
Students and Their Engagement**

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Abstract

This study aimed to investigate the impact of using Socratic SRS- based assessment on enhancing EFL Business Administration students' reading comprehension skills and engagement. The participants of this study were (48) first-year Business Administration students at Ahram Canadian University. The study employed the quasi-experimental design using two equal groups randomly assigned to the treatment and control groups. To collect data, two instruments were developed and validated; an EFL reading comprehension skills test and an engagement scale. They were administered as a pre- post-test for both groups before and after the ten weeks of treatment. In this study, the researcher used the Socratic SRS- based assessment with the treatment group, while the control group followed their regular method of teaching reading comprehension. Results revealed that using Socratic SRS- based assessment effectively enhanced the treatment group's EFL reading comprehension skills and engagement. Therefore, Socratic can be regarded as a reliable instructional tool that should be incorporated into language learning programs at different educational stages.

*Online Texts, EFL **Keywords:** Socratic SRS- based Assessment, Reading Comprehension Skills, Students' Engagement.*

استخدام التقويم القائم على نظام الاستجابة التفاعلي سوكراتيف في تنمية مهارات
الفهم القرائي باللغة الإنجليزية والانخراط في قراءة النصوص عبر الانترنت لدى

طلاب المرحلة الجامعية

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الملخص

استهدفت الدراسة الحالية الي توضيح أثر استخدام التقويم القائم على نظام الاستجابة التفاعلي سوكراتيف لتنمية مهارات الفهم القرائي باللغة الإنجليزية كلغة أجنبية والانخراط في القراءة لدى طلاب كلية إدارة الأعمال. وتكونت عينة الدراسة من ثماني وأربعون طالب من طلاب الفرقة الأولى كلية إدارة الأعمال جامعة الأهرام الكندية. واشتملت أدوات الدراسة على قائمة بمهارات الفهم القرائي باللغة الإنجليزية اللازمة لطلاب الفرقة الأولى، واختباراً للفهم القرائي باللغة الإنجليزية كلغة أجنبية وكذلك مقياس الانخراط. ولقد استخدمت الدراسة التصميم شبه التجريبي ذو المجموعتين (التجريبية والضابطة). وقد تم تطبيق اختبار الفهم القرائي ومقياس الانخراط قبلها وبعديا على كل من المجموعتين الضابطة والتجريبية. تلقى طلاب المجموعة التجريبية تدريبا استمر عشر اسابيع باستخدام التقويم القائم على نظام الاستجابة التفاعلي سوكراتيف ، بينما تلقى طلاب المجموعة الضابطة تدريبهم بالطريقة المعتادة. وأشارت نتائج الدراسة الى وجود فروق ذات دلالة احصائية بين متوسطات درجات طلاب المجموعة الضابطة وطلاب المجموعة التجريبية فى التطبيق البعدي في مهارات الفهم القرائي ككل ومقياس الانخراط لصالح المجموعة التجريبية. وترجع هذه النتائج الى فاعلية استخدام التقويم القائم على نظام الاستجابة

التفاعلي سوكراتيف. وتوصى الدراسة الحالية باستخدامه في المراحل التعليمية المختلفة لتنمية مهارات اللغة الإنجليزية كلغة أجنبية.

الكلمات المفتاحية: التقويم القائم على نظام الاستجابة التفاعلي سوكراتيف -النصوص عبر الانترنت- مهارات الفهم القرائي باللغة الإنجليزية كلغة أجنبية - انخراط الطلاب.

I-Introduction:

Reading is regarded as very essential and crucial skill. It is a receptive as well as an oral skill. Reading is necessary because it is acknowledged. Individuals nowadays should not only learn to read but also read to learn. This highlights the fact that one of the life skills is reading. It is the interpretation or understanding of symbols, either printed or written, within the core of reading as well as the message that the author is attempting to convey to the reader. Reading allows students to expand their vocabulary, boost their language learning skills, promote their intellectual skills, and create lifelong learning (McShane, 2005). Furthermore, reading is necessary for academic success at all educational levels. Reading is also a good source of information as it helps you learn a foreign or second language faster as well as enhances other language skills and aspects like writing, vocabulary, grammar, and spelling. Accordingly, reading somehow affects students' academic success, personal autonomy, and employment. As a result, reading serves as the basis for students' academic progress (Hussein, 2007; Calhoon, 2005; and Paris, 2005). The stated primary purpose of the reading process is comprehension. Without comprehension, learners would be unable to grasp or capture the meaning of the text (Block & Pressley, 2002). Furthermore, reading comprehension skills enable learners to read skillfully, learn efficiently, and conceptualise; this process should begin earlier and is effectively achieved when learners can connect prior knowledge and new information detected in the text (Grabe & Stoller, 2020). As a result, students must have a strong understanding and comprehension skills. Thereby, comprehending, using, assessing, reflecting on, and interacting with reading material is required to improve EFL learners' sustainable knowledge and identity to actively take part in developing their society.

Engaging EFL learners in the learning process has emerged as an innovative teaching paradigm because of the technological development and the change in their attention spans. Therefore, one of the fundamental goals teachers strive to accomplish is meeting their students' changing needs (Ahlfeldt et al., 2005). Engagement is a necessary element of learning that influences not only the learning process but also students' academic achievement (Sani & Hashim, 2016). Accordingly, student engagement is critical and required to succeed in life in general and higher education in particular (Burgess, 2012). As a result, engaging EFL university students in pedagogically productive performance strengthens the basis and behaviours of their skills, allowing them to live a fruitful, fulfilling life after graduation (Kuh, 2009). Students who are engaged demonstrate behavioural participation in learning as well as a positive emotional feeling (Fredricks et al., 2011), which exactly reflects Egypt Vision 2030 that seeks to attain in its educational systems. For that reason, higher learning institutions must work hard to improve and monitor learning engagement.

University education seeks to develop students' reading comprehension and engagement as both help them enhance habits of mind and develop their abilities for lifelong learning and self-development (Zhoc et al., 2019). Furthermore, students' active participation and continuous engagement are crucial in transferring colleges and universities into sustainable projects. Digital educational tools have been developed to improve the academic process by fostering collaboration, student engagement, generating a dynamic and enjoyable educational environment, and monitoring students' progress while learning. In this regard, utilising formative assessments across the lessons provides insight into whether students have reached full comprehension, assists

to understand where they are struggling with the material, and prepares them for summative assessments. Interestingly, digital applications and software aid in the improvement of formative assessment, especially through using student response systems (Elmahdi et al., 2018).

A Student Response System (SRS) is an online educational tool that facilitates interactions between instructors and learners as well as among learners themselves. Socrative as a free student response system is a quiz-based formative assessment tool with various characteristics that can improve both teaching and learning. It allows teachers to easily create quizzes, games, and activities that students can answer instantly. During a lecture, it offers immediate feedback to the student, and it facilitates to reflect students' satisfaction with both the learning materials and teaching strategies (Socrative Home page). According to Irving (2020), such new digital technologies aid in the process of formative assessment by creating classroom settings which enable teachers and learners to evaluate the learning process and provide mechanisms for presenting information about student learning progress throughout instructional frameworks.

On the other hand, emerging technologies have quickly altered how pupils read and share knowledge at home or school. Specifically, at the undergraduate level, Electronic Student Response System (SRS) has dramatically enhanced students' learning engagements by offering more mobile-savvy techniques (Lister, 2015). Accordingly, this study suggests that combining formative reading assessment with SRS tools such as Socrative can be a viable approach for tackling reading comprehension and student engagement issues that EFL students may be exposed to while also meeting the changing needs and expectations of mobile-savvy students. Besides, there is limited research on

applying Socrative as a new SRS tool that may add more sense of enjoying active participation in the EFL classroom. Thus, this study contributes to prior literature by investigating whether incorporating Socrative game mechanics into English classroom assessment can improve students' engagement and reading comprehension.

Further, consistent with the Egyptian vision for educational transformation and overhaul programme in 2019 by increasing technology uptake in classrooms (Oxford Business Group, 2022). However, to the best of our knowledge, the Egyptian ministry of higher education has no clear action plan on applying Socrative-SRS-based assessment in English language classrooms. Therefore, this study has a direct implication for practitioners by providing empirical evidence on the usefulness of Socrative-SRS-based assessment in the EFL classroom, which may raise a call for a reform of some aspects of the educational overhaul programme. As a result, part of EFL staff members' role is to offer empirical evidence on how to incorporate SRS tool in educational settings, particularly in universities. Thus, it is expected that this study will fill this gap by clarifying the effect of integrating Socrative-SRS-based assessment in English language classrooms.

Context of the problem:

Despite the importance of reading comprehension in language learning, it remains a challenge for EFL students. This is evident through the researcher's observation of the EFL reading classes at Ahram Canadian University. The researcher's observation revealed that most EFL students have problems reading comprehendingly, that may be traced back to the traditional teaching of their language teachers. This method of instruction focuses on presenting the meaning of vague or new vocabularies after asking students whether to read the passage

silently and highlight the words and phrases they are unfamiliar with or to read the passage aloud and then explain the meaning of the new or unfamiliar words. Moreover, noticeable difficulties regarding students' reading comprehension skills were identified. In addition, they passively participated and lost engagement in EFL reading classes, and their academic progress was poor. To document the current study's problem, the researcher conducted a reading comprehension test as a pilot study in Spring 2022 to detect the difficulties that first-year EFL Business Administration students at Ahram Canadian University encounter and the degree to which these students lack those skills. The pilot study's sample was 28 students. The pilot study results indicated that the majority of students could not identify the text's main idea or supporting details, draw conclusions, make inferences, guess the meaning of unfamiliar words, identify the author's opinion, or suggest a suitable title. In addition, the researcher conducted structured interviews with the same group of first-year Business Administration students to determine the obstacles that hindered their comprehension of the reading texts and their engagement. The students reported that they missed their interest while reading after a short time, and their engagement reduced due to the absence of an engaging instructional framework and continued encouragement. They also stated that playing electronic games, chatting, or even accessing Facebook significantly impacted their disengagement. As a result, there is a need to help teachers monitor all their students during class time to examine their comprehension of the reading passage and make sure that they are all fully engaged.

Statement of the problem:

The study problem can be identified in " EFL Business Administration students face numerous reading comprehension challenges and reduced engagement."

As a result, the purpose of this study was to improve their reading comprehension skills and increase their engagement via using Socratic SRS-based Assessment.

Questions of the Study:

1. What are the EFL reading comprehension skills required for first-year Business Administration students?
2. To what extent do first-year Business Administration students acquire these skills?
3. To what extent are EFL first-year Business Administration students engaged in their reading classes?
4. How can a Socratic SRS-based assessment intervention be used to enhance EFL reading comprehension skills among first-year Business Administration students?
5. What is the effect of a Socratic SRS-based assessment intervention on enhancing EFL first-year Business Administration students' reading comprehension skills?
6. What is the effect of a Socratic SRS-based assessment intervention on enhancing EFL first-year Business Administration students' engagement?

Hypotheses of the study:

The current study hypothesised the following:

- 1- There is a statistically significant difference between the mean scores of the treatment group and those of the control group on the post-administration of the reading comprehension skills test, favoring the treatment group.

2- There is a statistically significant difference between the mean scores of the treatment group in their performance in the pre and post administrations of the reading comprehension skills test, favoring the post-administration.

3- There is a statistically significant difference between the mean scores of the treatment group and those of the control group on the post-administration of the engagement scale, favoring the treatment group.

4- There is a statistically significant difference between the mean scores of the treatment group in their performance on the pre and post administrations of the engagement scale, favoring the post-administration.

Aim of the study:

The current study aims to enhance EFL first-year Business Administration students' reading comprehension skills and engagement via a Socratic SRS-based assessment intervention.

Significance of the study:

The current study is beneficial for the following considerations:

1. It expands the understanding of the significance of SRS-based assessment and its impact, especially on English language learning.
2. It offers empirical evidence to EFL teachers on the critical significance of Socratic SRS-based assessment in developing first-year Business Administration students' EFL reading comprehension skills and engagement.
3. It offers curriculum designers and specialists a new scheme for blending SRS-based assessment with the Socratic tool to teach and evaluate EFL courses to improve EFL learners' reading comprehension skills.
4. It allows tech-savvy EFL students to assess their comprehension in an exciting and engaging way inside their classrooms as well as meet their

technological passion, which contributes to breaking up the monotony of traditional EFL classrooms.

Delimitations of the study:

This study was delimited to:

- 1- Some EFL reading comprehension skills appropriate for first-year Business Administration students, approved by the jury members.
- 2- A group of forty-eight EFL students enrolled at Ahram Canadian University, Faculty of Business Administration, randomly selected and assigned to the treatment and control group.
- 3- Skillfl reading & writing 2nd edition digital book.
- 4- A Socrative SRS-based assessment intervention.
- 5- Student engagement scale.
- 6- A timeframe for implementing the treatment (ten weeks) in the spring semester of the academic year 2021-2022.

Definition of terms:

Reading comprehension:

Hans & Hans (2015, p.63) defined reading comprehension as "the level of understanding of a text/message. This understanding comes from the interaction between the words that are written and how they trigger knowledge outside the text/message". Furthermore, Crutis & Kruidenier (2005, p.9) defined reading comprehension as "the process of constructing meaning from what is read to comprehend, a reader must decode words and associate them with their meanings." According to the National Reading Panel (2000, 261), reading comprehension is defined as "the ability to make connections between the known and the new information encountered in texts. It is also the ability to ask

questions of the text, draw inferences during reading, synthesise information across text, and visualise images while reading".

Reading comprehension in this study is defined as a process in which first-year Bussiness Administration students at ACU can determine the main idea, identify specific details, guess the meaning of unfamiliar words, draw logical conclusions, make inferences about the text, recognize author's opinion, make predictions about the text, and suggest a suitable title for the text.

Students engagement:

Student engagement is defined as "participation in educationally effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes" (Kuh et al., 2007, 542), and as "the extent to which students are engaging in activities that higher education research has shown to be linked with high-quality learning outcomes" (Krause & Coates 2008, 493). While Hu & Kuh (2001, 3) defined student engagement as "the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes".

In this study, student engagement is procedurally defined as the quality of behavioural, cognitive, and affective effort students dedicate to instructionally constructive reading comprehension tasks and exercises which effectively help in improving their reading comprehension skills.

Socrative SRS-based assessment:

According to Tirlea et al. (2018, 1), Socrative is "a free, gamified, and easy-to-use online Student Response System (SRS) that allows students to respond to questions posed by teachers using internet-connected devices (e.g., laptop or smartphone)".

In this study, Socrative is a free, gamified, and easy-to-use online Student Response System (SRS) that allows EFL learners to actively participate in meaningful tasks and competitive quizzes posed by teachers using internet-connected devices (e.g., laptop or smartphone) to promote their reading comprehension skills and engagement.

II- Literature Review:

The following section highlighted this study's main variables: reading comprehension skills, student engagement, and Socrative SRS-based assessment.

Reading Comprehension:

When teaching ESL or EFL, reading is given special attention. Reading is considered one of the essential English skills that EFL and ESL learners aim to acquire effectively for various reasons; for instance, it helps learners gain knowledge and elevate their career path and academic performance. However, some others only master the skill for personal pleasure (Hardin, 2001). Reading is a complicated, meaningful, engaging, comprehending, and adaptable activity which requires a lot of time, effort, and resources to master. Readers read for a reason, whether for fun, knowledge, or investigation. Reading with a goal requires motivation, which is essential to being a good reader. It is a reciprocal activity in which readers connect their prior knowledge with new information existed on the printed paper. Reading is also interactive in the context that many skills interact with one another concurrently in the process. Readers usually expect to comprehend what they are reading. Reading is adaptable, which means that the reader uses a variety of strategies to be able to read efficiently. Finally, reading progresses gradually; a reader never becomes proficient overnight or immediately after completing a reading training course (Bojovic, 2010).

Reading instruction aims to help learners improve their attitudes, competencies, and skills necessary for acquiring information, promoting, responding to ideas, evolving interests, and ultimately deriving enjoyment from reading through comprehension. Thus, reading comprehension is one of the most crucial goals of the reading process. Comprehension relies on knowledge and the ability to relate what we don't know or new information to what we have already known (Shehata, 2006).

The National Reading Panel (2000, 261) defines reading comprehension "as the ability to make connections between the known and the new information encountered in texts. It is also the ability to ask questions of the text, draw inferences during reading, synthesise information across text, and visualise images while reading". It is an active process in which readers derive meaning in order to gain a thorough understanding of the information and ideas existed in a text (Westood, 2008). Reading comprehension is a complex process in which the brain is activated by observing a word, decoding it, and determining the related meaning. Readers construct meaning through interacting with the text utilising their prior knowledge and experience that may be found in the text. It refers to a student's ability to comprehend information presented in written form (Cartwright, 2015; Petersen, 2008).

While Nasr (2007) claims that reading comprehension is a negotiating understanding process between the reader and the writer, for him, this is a more complicated psychological process that entails phonological, morphological, syntactic, and semantic aspects. It also encompasses cognitive and emotional facets, as the reader attempts to recognise the author's attitude and feelings once receiving information about the text in the form of words, sentences, and paragraphs. In addition, Whitaker (2009) clarifies that efficient reading

comprehension relies on various factors associated with the reader, the text, and comprehension behaviour. Reading comprehension requires accurate word decoding, language comprehension to keep reading, memory skills, vocabulary acquisition, prior knowledge, and complex reasoning skills.

Moreover, Berry (2005) categorises comprehension in reading into four levels based on the ability to absorb, process, and analyze information. The comprehension levels in order are; the literal, the inferential, the critical and the creative. The literal level is the first. The principal concern at this level is comprehending fundamental facts. At this level, the learner needs to simply grasp the main ideas and facts in a text; they can give direct answers to the questions. The inferential level is the second level. Learners can get a deeper analysis even if the information is not directly explicit; thus, learners are expected to infer and draw a conclusion in order to answer questions at this level. As a result, the answers to these questions are not explicitly stated in the text but are implicitly understood. The critical level is the third. At this level, the reader can evaluate what they've read in terms of clarity, accuracy, and any subjectivity or exaggeration. The fourth and final level is the creative level. Here, the reader is able to generate new ideas and thoughts based on the information and ideas introduced in the text. This level promotes the reader's reflection. Following these four levels of comprehension helps readers to develop their English proficiency and performance.

On the other hand, Roit (2008, 14) outlines the reading comprehension skills as follows; "identifying the author's point of view, determining the author's purpose, differentiating between main ideas and details, identifying cause and effect relationships, ordering a sequence of events, comparing and contrasting ideas, drawing conclusions, making inferences, distinguishing fact

from opinion, and distinguishing fantasy from reality." These skills help students organise information, improve understanding, and analyse and evaluate reading materials.

According to Leane (2002), there are three main types of reading activities: pre-reading, while-reading, and after-reading. In pre-reading activities, students are prepared to read the text. They give students a sense of what the topic of the text will be about, which motivates them to read. While-reading activities help students interact with and understand the text, whereas after-reading activities encourage students to critically analyse what they have read. After-reading activities also help students understand the text better.

Due to the significance of teaching reading comprehension skills, instructors should provide appropriate, engaging instructional frameworks and offer students multiple opportunities to participate and provide them with immediate feedback to be able to comprehend the reading texts, an idea that the present study seeks to achieve.

Student engagement:

The need for graduates to be holistic is critical in meeting the stakeholders' demand to produce a physically and emotionally equipped generation to meet the expectations of recent trends in multiple fields of the 4th Industrial Revolution (IR4.0). As a result, fresh graduates are assumed to be qualified and competent in a wide range of skills, including communicative, team-building, critical and creative thinking, problem-solving, leadership, technical, and lifelong learning. To meet current demand, higher education teaching practices must be revolutionary in order to prepare university students for the competitive market that they will face after graduation (Sani, 2019). Over the last few decades, engagement has emerged as a critical issue in educational

settings (Kahu, 2013). Moreover, among several aspects that included teaching and learning practises in higher education, student engagement is a widely discussed domain in providing quality education (Ashwin & Mcvitty, 2015). It meets the fundamental goals of Egypt's Vision 2030, which proclaims continuous interaction and practise, which in turn affect student learning and achievement (Irvin et al., 2007).

Student engagement is defined as "...participation in educationally effective practices, both inside and outside the classroom, which leads to a range of measurable outcomes" (Kuh et al., 2007, 542), and as "the extent to which students are engaging in activities that higher education research has shown to be linked with high-quality learning outcomes" (Krause & Coates 2008, 493). In a similar vein, Hu & Kuh (2001, 3) define engagement as "the quality of effort students themselves devote to educationally purposeful activities that contribute directly to desired outcomes". Student engagement was greatly associated with the time, effort, and plenty of resources spent by both students and institutions with the purpose of improving their learning experience and outcomes (Trowler, 2010). As a result, instructors should pay close attention to gauging and stimulating students' motivation in conjunction with their effort throughout the learning process.

According to Fredricks et al. (2004), engagement is frequently viewed as a three-component structure with a behavioural dimension (e.g., positive behaviour, attendance, participation and involvement), an affective or emotional dimension (e.g., positive affective reactions involving interest, identification, sense of belonging), and a cognitive dimension (e.g., appreciation of challenges, self-regulation, learning goals, investment in one's activities). Similarly, Perez et al. (2018) agree that student engagement consists of three constructs:

behavioural, emotional, and cognitive. Behavioural included academic and multitasking activities carried out by students in and out of the classroom. The emotional construct addressed students' attitudes, desires, and beliefs when they experienced learning and higher education. Finally, the cognitive construct was concerned with the students' motivational goals and self-regulated learning abilities. While Philip & Duchesne (2016) emphasise that student engagement consists of cognitive, behavioural, emotional, and social constructs.

As a result, the term "student engagement" refers to a sustained effort to employ and make use of various variables in the learning process that will decide academic achievement. According to Dixson (2015), engagement is made up of one's attitude, thoughts, behaviours, and communication, and it is where learners invest time, energy, thoughts, and feelings in order to learn. In this study, the researcher determines to investigate the most addressed student engagement variables: behavioural, affective, and cognitive.

Many studies have demonstrated the importance of student engagement in sustaining quality education, particularly in higher education. Dunn & Kennedy (2019) looked into the advantages of student engagement on academic achievement. The study discovered that intrinsic motivation, which in turn led to the engagement, facilitated the development of the students' grades. A further study conducted by Boulton et al. (2019) identified a connection between student engagement and campus well-being. The study revealed that students who participated in the feedback loop improved their academic performance and became happier. Zepke & Leach (2010) associated student engagement to higher education success, which in turn decided employability and retention. Therefore, learning engagement is achieved when students actively participate and are motivated in their learning, as evidenced by formative assessment.

Socratic SRS-based assessment:

Teaching, learning, and assessment have always been closely associated. The importance of assessment in teaching and learning is based on its ability to connect between the learners' performance and the target performance. (Black, 2009). The aim of assessments, particularly formative assessment, does not only revolve around detecting and improving the students' comprehension and engagement in learning, but it also assists the teacher's pedagogical decisions (Dakka, 2015). In this regard, utilising formative assessments across the lessons provides insight into whether students have reached full comprehension, assists in understanding where they are struggling with the material, and prepares them for summative assessments. Thus, it elevates students' learning engagement and comprehension of the academic content (Evolving Ed, 2018).

Technology has been incorporated into English language classrooms (Alzaid & Alkarzae, 2019). Kaya (2015) clarifies that incorporating technology in the EFL context can aid in the creation of an optimal learning environment for students. Similarly, Ghasemi & Hashemi (2011) assert that implementing technology in teaching English language enables students to choose, illustrate, and evaluate information, assess their performance, increase their competence, feel more confident, and become independent. This integration has positively changed the ways of assessments. Many new innovative ways of assessment are used to enhance assessments and learning (Dakka, 2015). Digital applications and software aid in the improvement of formative assessment, especially through using student response systems (Elmahdi et al., 2018). A Student Response System (SRS) is an online educational tool that facilitates interactions between instructors and learners as well as among learners themselves. For instance, gamified Student Response System (SRS)

refers to the use of technology-based games in a non-game environment; the tool aims at improving the student's performance and engagement in the classroom (Bicen & Kocakoyun, 2018).

Researchers proved the benefit of using SRS tools in the learning environment of all levels of learning in general and university level in particular. The studies show that SRS enhances collaborative learning and helps students be more focused and engaged with their academic materials. In addition, it boosts the students' reading skills as well as their overall academic achievements (Abdel Fattah et al., 2020; Hung, 2017; Aljaloud et al., 2015). Moreover, several studies show that implementing tools like SRS in the classroom has increased the students' reading comprehensions performance for several reasons (e.g., Hung, 2017; Lee & Oh 2014; Yu & Yu 2017). First, students are encouraged to participate and think critically. Second, they gain more confidence through cooperative work with their peers. In addition, students are more to deepen their understanding as they receive immediate feedback from their teacher (Boyle & Nicol, 2003; Draper, 2009; El Shaban, 2017; Sprague, 2016). SRS, in a nutshell, develops an interesting learning environment in which students engage with the reading passage and receive immediate feedback that helps them comprehend the topic being discussed (Draper, 2009).

Socrative is the term for the SRS technological software under investigation in this study. Socrative refers to the SRS technology-based system that can be implemented in EFL classrooms; this formative assessment tool was developed by Boston graduate students in 2010 (El Shaban, 2017). It provides students with free and easy access to an online assessment and feedback software where teachers can post exams and quizzes allowing them to respond

to these questions using their smartphones, laptops or tablets (Tirlea et al., 2018). In addition, Socrative incorporates game-based tasks to encourage students to actively participate in the classroom (Jurenec, 2018); gamification elements in each task can be represented by incorporating instant feedback, points, leaderboards, and badges (Flores, 2015).

According to Margarida et al. (2010), Socrative SRS-based Assessment is founded on three major theories: behaviourism, cognitivism, and constructivism. To begin, in terms of behaviourism, students are expected to receive stimulus (questions) as well as their teachers' and peers' positive or negative feedback (Pitarch, 2018). Stimuli (questions) in Socrative SRS-based assessment aim to encourage students to overcome their fear of making mistakes in class as they receive feedback from their peers and teacher. Learning here is more contextual in that students experience knowledge rather than simply describe it. It also increases their participation and engagement with their academic content (Rivas, 2017). While cognitivism theory focuses on the student's cognitive ability to participate actively in the learning process. The Socrative SRS-based assessment necessitates learners' active participation to learn, including memorising the required information and problem-solving. Here, Socrative entails learning by doing, which requires knowledge construction and interpretation and then applying it in the digital world based on the student's knowledge and experiences (Pitarch, 2018). Furthermore, constructivism theory encourages students not only to actively construct their knowledge, but also grasp their learning experience (Perkins, 1991). According to Duffy & Jonassen (1991), constructivism theory emphasises the significance of learning context and asserts that active participation in well-designed

activities facilitates knowledge acquisition and improves the learner's academic skills.

The goal of applying Socratic SRS-based assessment in the EFL classrooms is to assist students in improving their reading comprehension and learning experience. It offers learners a framework to read, review, and discuss the reading subject while either collaborating with their peers or competing against them to answer quizzes. This leads to a better understanding of the subject being read, consequently improving students' reading comprehension (Donovan, 2017; Hung, 2017). In addition, it retains and accomplishes sustained desire in reading comprehension by allowing EFL students to actively participate in purposeful tasks and challenging quizzes. Moreover, Socratic's game elements, like earning badges and rewards as well as immediate feedback, can encourage and inspire learners in the learning contexts, which can raise the level of the students' effectiveness (Deterding et al., 2011). This level of effectiveness can be seen in a wide range of tasks, including quizzes, lectures, class exercises, puzzle-solving, and assignments. These badges, for instance, are symbolic rewards given to students when they correctly complete any activity or task to share their accomplishments with their peers and family members (Abramovich et al., 2013). Students can review the previously achieved badges as well as the requirements for obtaining new ones (Hanus & Fox, 2015).

EFL learners of the digital age are more familiar with using technology. Thus, they are expected to be more influenced by Socratic SRS-based assessment pedagogical practices and quizzes. Furthermore, students' active participation in reading activities can develop their engagement and reading comprehension skills (Menezes & De Bortoli, 2016).

There are many advantages of incorporating Socratic SRS-based Assessment in the EFL reading context. The first advantage is meaningful feedback. Feedback must be clear, meaningful, personalised, arrive at the appropriate time, encourage learners to keep up with the task and allow them to review their errors to correct them (Jurenec, 2018). This quick, clear, and relevant feedback assists students in incorporating it into previously learned knowledge, correcting the knowledge, and comprehending what is being read (Freeman & Tashner, 2015). The availability is a second advantage. Socratic's availability as a free app for both instructors and learners enables its implementation in EFL settings, particularly higher education (Faya Cerqueiro & Martin-Macho, 2019). The third advantage of Socratic is its versatility in terms of the variety of questions that can be created without limit to the number of questions per quiz. Socratic can be used to generate various questions, such as; multiple-choice, True/False, and short answer questions that can direct the emphasis of the reading tasks and stimulate discussions with students in order to promote comprehension and engagement (Tirlea, et al., 2019).

In conclusion, Socratic's accessibility as a free tool for both instructors and students enables its integration into EFL classroom practises, particularly in universities (Faya Cerqueiro & Martin-Macho, 2019). Furthermore, it is a beneficial and essential tool in the EFL context as it improves students' interactions and allows them to provide immediate formative feedback (Kim, 2019). According to El Shaban (2017), students and instructors can access the software via their portable electronic devices; students are also able to join their teacher's classroom with only a code; it is not a necessity to have an account. Finally, Socratic facilitates the assessment process both in and out of the classroom. Socratic's fundamental aim is to track and monitor students'

comprehension and interaction. It helps teachers assess all the students' performance, not just those who raise their hands to participate. It also assisted students who were afraid of conferencing and provided daily evaluation to the teacher (El Shaban, 2017).

A vast amount of recent research has examined the impact of utilising Socrative in the educational process. El Mashharawi (2022) examined learners' perspectives on the impact of using Socrative in their learning experience before and during the pandemic. The study sample was EFL undergraduate Palestinian students at the faculty of Applied Sciences whose English level was intermediate. The treatment started two months before the Covid-19 pandemic and lasted throughout the pandemic via online classes. The survey was applied before and after the treatment. The study findings revealed that most students have favourable perspectives on using Socrative because it significantly enhanced their learning experiences in both traditional and online classes. It also assists teachers in tracking their student's progress toward learning objectives over time. Moreover, Faya Cerqueiro & Martin-Macho (2019) sought to investigate 1st-year university students' progress through using the Socrative app during lecture sessions, collaborative reading activities, and cooperative review games. The findings revealed a significant increase in the perception of Socrative as an entertaining and effective tool for providing constructive feedback and real-time responses. Surprisingly, incorporating Socrative gamified exercises could increase students' engagement. Another study by Kent (2019) explored the impact of incorporating Student Response System (SRS) with formative assessment on Korean EFL learners' engagement and reading skills in EFL reading classrooms. According to the findings, integrating SRS in classrooms can generate a digitally interactive learning environment to

develop reading comprehension skills. This research also demonstrated how Socrative is a suitable and beneficial tool for providing formative feedback and saving classroom time. Socrative, according to the study participants, had a positive effect on their participation and engagement in class, and it also facilitates learning.

Likewise, Abdulla (2018) discovered in his research that using online-based exercises via Socrative was well received by medical students as an interactive and engaging classroom activity that also improved their performance. He discovered that students' performance in the exam in 2016 after the implementation of Socrative was 14 percent higher than the previous year, 2014, when no Socrative activities were used. Furthermore, Tirlea et al. (2018) explored the effect of implementing Socrative tool within a university environment on participants' academic engagement, self-efficacy, autonomy, and statistics anxiety. The study results revealed that incorporating Socrative into the statistics course alters the dynamics of the class, resulting in increased engagement, interaction, and entertainment. In addition, El Shaban (2017) investigated the advantages of SRS in promoting active learning among ESL students. It looked at how incorporating Socrative with active learning activities affected ESL learners' perspectives of using this tool. The findings revealed that combining SRS with active learning promoted student engagement, improved critical thinking, and encouraged collaboration. Thus, the student response system (SRS) is an appropriate technological tool to be implemented in EFL classrooms to increase students' active participation.

Moreover, Socrative has been shown to be effective in other areas of language, like grammar and phrasal verbs. The study by Maesaroh et al. (2020) sought to examine the impact of Socrative and Kahoot on teaching grammar to

students of varying interests. According to the findings of this study, Socrative is beneficial to learners with high and low interest (79.17 and 57.50), as well as Kahoot is also appropriate for learners with high and low interest (85.50 and 62.86). Furthermore, Kahoot is more effective than Socrative in teaching grammar. While Vurdien (2021) investigated how using Socrative as an SRS could pique students' interest in studying phrasal verbs. The study looked at how much participants were encouraged to learn that lexicon via quizzes. The research showed that the participants' overall attitude was positive. As a result, Socrative could be regarded as an accurate educational tool for improving phrasal verb learning.

Thus, Socrative was chosen for this study from various free, available tools because it is widely proposed in university settings (Rae & O'Malley, 2017). It also allows the researcher to monitor their students' level of comprehension and engage them with the reading text (Tirlea et al., 2019), which clearly states the aim of the study.

III- Method, Instruments, and Procedures:

A- Design of the study:

This study is a quasi-experimental that uses a pre-post test design with two groups (control and treatment) to scrutinise the impact of a Socrative SRS-based assessment intervention on improving EFL Business Administration students' reading comprehension skills and engagement.

B- Instruments and materials of the study

- 1) A checklist of EFL reading comprehension skills appropriate for first-year Business Administration students.
- 2) An EFL reading comprehension skills test to measure students' targeted skills.
- 3) The student engagement scale.

4) The suggested Socratic SRS-based assessment intervention was implemented to enhance EFL Business Administration students' reading comprehension skills and engagement.

1- The EFL reading comprehension skills checklist:

This checklist was designed to determine the first-year Business Administration students' reading comprehension skills they require (see Appendix. A). Initially, it included 14 reading comprehension skills after reviewing the relevant literature. It was then sent to 11 TEFL jury members to verify its suitability to those students' level. Regarding their recommendations and skills high percentage, the following skills were selected; "Determine the main idea, Identify specific details, Guess the meaning of unfamiliar words, Draw logical conclusions, Make inferences about the text, Recognize the author's opinion, Make predictions about the text, Suggest a suitable title for the text".

2- The EFL reading comprehension Skills Test:

a. Aim:

This test was pre and post adopted to assess EFL students' assigned reading comprehension skills. It was applied prior to the intervention to guarantee that students in both groups had approximately the same level regarding reading comprehension skills. Hence, any noticeable progress made by the treatment group students could be credited to their use of Socratic.

b. Description of the Test:

Depending on the TEFL jury's feedback and recommendations, the final form of the pre-posttest of EFL reading comprehension skills was altered. The test was created to assess the eight assigned EFL reading skills mentioned in the ENG 100 reading course description and deemed critical for Business Administration students. The test included two reading passages; each passage tackled the eight skills (see Appendix. B).

c. Piloting the test:

The test was applied to a randomly selected group of (28) first-year Business Administration students before the intervention. Those students did not participate in the research. The piloting was utilised to evaluate the test's validity and reliability, as well as to verify the questions' clarity and language appropriateness for the students' level, and finally, identify the appropriate time needed to perform the test.

Nothing was reported regarding the questions' language level. For calculating the appropriate test time, the researcher applied this formula:

$$\frac{\text{The sum of all students' duration}}{\text{Their numbers}} = 80 \text{ minutes}$$

Validity of internal consistency of the EFL reading comprehension test:

To verify the test's internal consistency, the coefficient correlation was calculated between the score of each skill and the total test.

Table 1
Correlation Coefficients between the Score of Each Individual Skill and the Overall Test Score of the EFL Reading Comprehension Test

N	Skill	Correlation coefficients	Level of significance
1		0.88	0.01
2		0.92	0.01
3		0.90	0.01
4		0.88	0.01
5		0.82	0.01

6		0.86	0.01
7		0.76	0.01
8		0.86	0.01

The previous table demonstrates that all the test items were valid.

Reliability of the test:

The Alpha coefficient was determined to be (0.81), indicating that the EFL reading comprehension test was consistent and reliable.

Scoring the test:

All the test questions were objective. Three marks were assigned for each question. Thus, The total score for the EFL reading comprehension skills test is "48".

3- The student engagement scale.

a- Description of the scale

The researcher developed a student engagement scale in light of related literature and previous studies; the National Survey of Student Engagement (2020), Schreiner & Louise (2011) and Alvarez-Bell et al. (2017), to investigate students' level of engagement in English language reading course before and after the treatment. The students' engagement scale included three main constructs; behavioral, affective, and cognitive. Each construct had 9 items. Each item of the scale was answered on a 5-point Likert scale ranging from 1 Strongly Disagree to 5 Strongly Agree (see Appendix. C).

b. The content validity of the scale:

The first form of the scale was submitted to TEFL jury members to decide if the indices of each construct accurately measured its construct in particular and student engagement in general. In its first form, the scale had 36 items.

However, the jury members omitted some indices due to repetition, demonstrating the scale's validity. After omitting the items proposed by the majority of the jury, the final form of the scale consisted of three constructs with 27 indices, nine indices for each construct. For each scale construct, the minimum possible score was 9 and the maximum possible score was 45.

c. Scale reliability:

The scale was applied to other 28 students rather than the study's sample to assess scale reliability. Cronbach Alpha analysis was used to assess the scale's reliability. The test-retest reliability scores of cognitive, behavioral, and affective engagement were 0.88, 0.84 and 0.76, respectively.

Table 2
Correlation Coefficients between the Score of Each construct and the Overall Score of the engagement scale

N	Construct	Correlation coefficients	Level of significance
1	behavioral	0.84	0.01
2	affective	0.76	0.01
3	cognitive	0.88	0.01

These findings revealed high test-retest reliability for each engagement construct. It signifies the precision of the scale's phrases and their ability to measure what they were designed to measure.

d. Scale duration:

The average time of the scale was calculated by adding the duration of the first and last student who completed the scale and dividing the total by two. As a result, the time allotted was $23+37/2= 25$ minutes.

4- The suggested Socratic SRS-based assessment intervention:

During the spring semester of the academic year 2021-2022, the intervention was implemented at Ahram Canadian University, Faculty of Business Administration. Prior to the start of the experiment, all students in both the control and treatment groups completed the reading comprehension skills pre-test as well as the engagement scale.

-The Suggested stages for implementing Socratic SRS-based assessment intervention: (see Appendix. D)

1- Pre-reading stage: In this stage, teachers activate students' background information related to the reading topic and pre-teach some vocabularies.

2- While- reading stage: In this stage, the teacher provided the students with the online reading passages. Then, the teacher instructed students to read the assigned reading texts to be prepared for the next phase.

- Using Socratic to assess reading comprehension: The principal goal of this phase was to utilise Socratic tool to examine the students' comprehension of the reading passage. In this phase, after students read the passage, the teacher gave them the Socratic-based quiz code to answer. Students respond to multiple-choice and short answer questions to evaluate their reading comprehension. All their responses were registered digitally and appeared on the data show. Some quizzes were taken individually, while others were in groups. The teacher monitored all of the students' responses on the spot and checked their understanding.

3- After reading stage: Giving feedback: This final stage focused on determining and highlighting reading comprehension issues to discuss with the students in order to assist them reading better to comprehend the content of the reading passages. During this stage, Socrative assisted and guided both the researcher as well as the students in monitoring their comprehension of the passages being read, which in turn enhanced their reading comprehension skills. In addition, students were aware of their errors and were taught from them hence becoming more engaged.

- Assessment of the treatment:

Following the completion of the treatment sessions, the study groups were exposed to the reading comprehension skills post-test and engagement scale to assess the impact of using Socrative SRS-based assessment. The data was calculated using SPSS to identify any differences in the scores of study groups' pre and post-test.

IV. Data Analysis and Results:

The quantitative study's findings are introduced by referring them back to the research hypotheses. The researcher adopted independent samples t-test to justify the first hypothesis, which stated, "There is a statistically significant difference between the mean scores of the treatment group and those of the control group on the post-administration of the reading comprehension skills test, favoring the treatment group".

Table (3)

T-Test Results Comparing the Performance of the Treatment and Control Groups on the Post-Administration of the EFL Reading Comprehension

Group	N	Mean	Std Deviation	“t. value”	df	Sig	Effect size η^2	D
Treatment	24	37.88	3.94	10.39	46	0.000	0.70	1.50
Control	24	25.75	4.14					

The prior table shows that a significant difference was detected between the treatment and control groups in the post-applications of the EFL reading comprehension skills test. Furthermore, the treatment group's mean score (37.88) is larger than the control group's score (25.75). As well, using Eita Square and Cohen's formula for calculating the effect size for independent samples, it was evident that the effect size was high in favour of the treatment group. This also suggests that the intervention facilitated the improvement of EFL reading comprehension skills. Consequently, the first hypothesis of the study was validated.

Regarding the second hypotheses, the researcher used Paired t-test sample to justify the second hypothesis which stated "There is a statistically significant difference between the mean scores of the treatment group in their performance in the pre and post administrations of the reading comprehension skills test, favoring the post-administration".

Table (4)

T-Test Results Comparing the Performance of the Treatment Group on the Pre and Post-Administrations of the EFL Reading Comprehension

EFL Reading comprehension test	Mean	Std Deviation	“t. value”	df	Sig	Effect size η^2	D
Pre	24.54	3.82	16.86	23	0.000	0.93	3.44
Post	37.88	3.94					

The above table shows that a significant difference was revealed in the mean scores of the treatment group between the pre and post-application of the reading comprehension test. The score of the post-application of the reading comprehension test (37.88) is greater than the pre-application (24.54).

Moreover, the effect size was calculated, and it was higher in the post-application, indicating that the intervention improved students' reading comprehension skills. Thus, the second hypothesis of the study was proven and accepted.

To test the third hypotheses, which stated that "There is a statistically significant difference between the mean scores of the treatment group and those of the control group on the post-administration of the engagement scale, favoring the treatment group", independent samples t-test was applied.

Table (5)

Test Results Comparing the Performance of the Treatment and Control Groups on the Post-Administration of the Engagement Scale

Group	N	Mean	Std Deviation	"t. value"	df	Sig	Effect size η^2	D
Treatment	24	102.33	11.89	11.71	46	0.000	0.74	1.69
Control	24	68.92	7.35					

The preceding table indicates that a significant difference in the post-applications of the engagement scale was found between the treatment and control groups. Besides that, the mean score of the treatment group (102.33) is higher than the score of the control group (68.92). Furthermore, when the effect size for independent samples was calculated, it was clear that the effect size was large in favour of the treatment group. This also implies that the intervention increases students' engagement. As a result, the study's third hypothesis was validated.

To investigate the fourth hypotheses, which stated that "There is a statistically significant difference between the mean scores of the treatment group in their performance on the pre and post administrations of the engagement scale, favoring the post-administration."

Table (6)

T-Test Results Comparing the Performance of the Treatment Group on the Pre and Post-Administrations of the Engagement Scale

Students' engagement scale	Mean	Std Deviation	"t. value"	df	Sig	Effect size η^2	D
Pre	67.75	8.68	14.70	23	0.000	0.90	3.01
Post	102.33	11.89					

Table (6) illustrates that a significant difference was revealed in the mean scores of the treatment group between the pre and post-application of the engagement scale. The post-application score of the engagement scale (102.33) is greater than the pre-application (67.75). Moreover, the effect size was calculated, and it was higher in the post-application, indicating that the intervention improved students' engagement level. Thus, the fourth hypothesis of the study was supported and approved.

Based on the preceding tables, it was determined that Socratic SRS-based assessment was beneficial in enhancing EFL Business Administration students' reading comprehension skills and their engagement.

V- Discussion of the results:

One of the primary reasons for the abovementioned outcomes is the quizzing nature of Socratic SRS-based assessment. Socratic quizzes were

used to encourage students' engagement and evaluate active learning outcomes in an EFL reading classroom. Socrative quizzes created a digitally interactive learning and educational environment used to collect responses from students using an active learning tool. While taking quizzes, the motivating factor inspired students to work harder to read and re-read the assigned reading passages in order to fully understand them. Socrative-based quizzes improved students' comprehension by directing their focus to the assigned reading passages and encouraging not only cognitive engagement with meaning but also metacognitive monitoring of their comprehension.

Socrative allows instructors to construct and design quizzes as well as other educational activities that direct students' attention to a specific reading text while also improving their comprehension of that text. Furthermore, students found the live online quizzes for their assigned reading texts to be fun and exciting, mainly because they could challenge themselves and their classmates using Socrative's 'Space Race' option. This clarification is in line with Chan et al.'s (2019) study findings.

Moreover, One of the Socrative tool's main assets is to provide immediate formative feedback. This meaningful, immediate formative feedback on the reading activities encouraged students to keep going and persevere with the challenging tasks in order to gain a better understanding and engagement with the reading texts. The use of real-time responses guaranteed an interactive environment between students and their teachers. It also provided students with the chance to check their errors and hence track their comprehension. As a result, Socrative was regarded as a beneficial application because it allows for immediate formative feedback, allowing both the instructor to track their

students' progress and students to check their comprehension. This is consistent with Vurdien's (2021) study.

Socrative has an interesting and humorous feature transforming the reading process into a humorous and engaging experience. Reading was not anymore that tense and perplexing activity. Students were willing and enthusiastic to practise reading to join Socrative's user-friendly, accessible, and gamified interactive learning environment and challenge themselves and their classmates, which in turn improved both their reading comprehension and engagement. Furthermore, the game-based peculiarity of the Socrative tool increases students' ambition and motivation to read and participate in various learning activities and tasks (Bicen & Kocakoyun, 2018). A Socrative game-based environment developed a sense of innovation and encouraged the technologically savvy students to engage because it accommodated their needs and interests. In addition, Socrative positively affected students' motivation, inspiring them to participate in classroom activities actively and accomplish learning tasks. This is compatible with Faya Cerqueiro & Martin-Macho (2019) study findings.

By applying Socrative SRS-based assessment, the reading class can be transformed into a collaborative learning environment where students interact with their peers and their teacher. Students have the chance to share their responses to questions with their teacher as well as their colleagues before figuring out the reason for the correct or appropriate answer. This results in an increase not only in teacher–student but also in student-student interaction and discussion. These interaction techniques turned the reading class to be more energetic and interactive, which increased students' engagement. In addition, reading achievement has also been boosted by peer-focused reading. Using

Socrative's team versus team competition characteristic encouraged reading comprehension and engagement by having team members assist and support each other in recalling the texts on which the Socrative quizzes were based. This aligns with Iaremenko's (2017) study results.

Finally, with Socrative's making students' responses anonymous feature, the most hesitant and reluctant students were encouraged to respond and take part without being embarrassed or intimidated if their responses were incorrect. As a result, the non-obstructive environment created by Socrative SRS-based assessment explained the study's findings.

VI- Conclusion:

Considering the current study delimitations and the findings, it was concluded that Socrative SRS-based assessment is beneficial and effective in enhancing EFL first-year Business Administration students' reading comprehension skills and increasing their engagement. In addition, it contributes to the literature on implementing Socrative SRS-based assessment as a digital platform in university settings for foreign language teaching and assessment. It assists policymakers and coursebook designers in repositioning existing evaluation tools to improve reading comprehension skills and students' engagement. Moreover, it motivates EFL instructors to use Socrative as an educational SRS-based assessment tool in EFL contexts to boost students' engagement. Finally, this study acquainted the technologically savvy students with a new digital tool to improve their interest and engagement in reading classrooms. In conclusion, Socrative can be regarded as an effective pedagogical tool for improving English language skills in various contexts.

VI- Recommendations:

The following recommendations concerning EFL teaching should be taken into account in light of the study findings:

- 1- Orienting EFL teachers on how to use Socratic SRS-based assessment in or outside classroom settings to help students improve their reading comprehension skills.
- 2- Engaging Students enrolled in reading courses from the beginning as it constitutes an essential part of the learning process.
- 3- Once tackling reading comprehension skills, EFL curriculum specialists should consider Socratic and other SRS assessment tools.
- 4- Encouraging and giving students chances to collaborate in pairs and groups.

VII- Suggestions for further research:

The study provides these suggestions for further research.

- 1- Using other SRS tools like quizzlet, padlet, kahoot, flip quiz to develop reading comprehension skills.
- 2- Exploring the impact of Socratic SRS- based assessment on developing reading comprehension skills in other educational levels and larger sample sizes.
- 3- Examining the effect of a suggested program based on Socratic integrated flipped classroom on improving EFL students' listening skills.
- 4- Investigating the effect of padlet on developing EFL students' speaking skills and overcoming their anxiety.

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