




RESEARCH

Open Access



# Collaborative learning, scaffolding-based instruction, and self-assessment: impacts on intermediate EFL learners' reading comprehension, motivation, and anxiety

Khaled Ahmed Abdel-Al Ibrahim<sup>1,2\*</sup>, Nestor Cuba Carbajal<sup>3</sup> , Manuel Enrique Chenet Zuta<sup>4</sup>  and Sania Bayat<sup>5</sup> 

\*Correspondence:  
kibrahim1985@gmail.com

<sup>1</sup> Educational Psychology,  
College of Education, Prince  
Sattam Bin Abdulaziz University,  
Al-Kharj, Saudi Arabia

<sup>2</sup> Sohag University, Sohag, Egypt

<sup>3</sup> Departamento Académico:  
Facultad de Ciencias de la  
Comunicación, Turismo y  
Psicología, Universidad de San  
Martín de Porres, Lima, Perú

<sup>4</sup> Departamento Académico:  
Escuela Profesional de  
Administración y Gerencia,  
Universidad Ricardo Palma URP,  
Lima, Perú

<sup>5</sup> Department of English  
Literature, Faculty of Foreign  
Languages, Rasht Branch, Islamic  
Azad University, Rasht, Iran

## Abstract

This research set to examine the impacts of collaborative learning (CL), scaffolding instruction, and self-assessment on reading anxiety, reading motivation, and reading comprehension of Iranian EFL learners. Based on Preliminary English Test (PET) results, a sample of 58 students was chosen to represent the study's sample subject out of a total of 71 participants. Running a convenience sampling technique, two equal groups (the control and experimental) were chosen at random from among them. Afterward, both groups completed pretests to gauge their reading motivation, anxiety, and comprehension. Two groups were then treated with a variety of treatments. Learners in the experimental group got scaffolding instruction, self-assessment, and CL as treatment, whereas the control group received typical instructor-based teaching and assessment. Later, both groups took the post-test for reading anxiety, reading comprehension, and reading motivation after the treatment. According to the one-way ANCOVA analysis, the post-test results for the two groups were different. Based on the data analysis, the experimental group outdid the control group in reading anxiety, reading motivation, and reading comprehension. It was concluded that Iranian EFL learners were able to develop both their reading comprehension and reading motivation while experiencing less reading anxiety thanks to CL, self-assessment, and scaffolding instruction. Finally, the conclusions, implications, limitations, and suggestions for further studies were provided.

**Keywords:** Collaborative learning (CL), Reading anxiety, Reading comprehension, Reading motivation, Scaffolding instruction, Self-assessment

## Introduction

The notion of CL is primarily grounded on Vygotsky's socio-cultural theory (SCT), which views learning as a social process that is triggered via the Zone of Proximal Development (ZPD) of learners (Dillenbourg, 1999a, b). Social constructivist epistemology has benefited greatly from Vygotsky's sociocultural viewpoints, which emphasize how learning is affected by peer experience and context. This perspective clarifies the link

between social interaction and cognitive growth in humans. According to the socio-cultural approach, learning is a social concept rather than an individual one, and interaction is what actually causes learning to occur (Lantolf & Thorne, 2006). Swain (2000) identifies CL as one of the most important and effective ways for learning to occur, and there is a long tradition of emphasizing the reciprocal investigation of a subject through social interaction with peers and with instructors, and students.

Working with someone who is more competent is important for personal growth, according to Vygotsky (1978), who founded his paradigm on CL. Vygotsky, who placed a strong emphasis on the individual within a CL framework, is renowned for his discoveries that learning is initially mediated on social levels among kids and the people in her/his surroundings before being internally processed by them on personal levels. Second, learning on social levels frequently entails mentorship from more experienced people, whether they be peers or adults, who interact with less proficient people in the guiding or cooperation process (Lin, 2015). In this tradition, CL aims to promote social interaction between pupils and teachers and basically helps learners move in the ZPD, which is characterized as the gap among students—as measured by autonomous problem-solving and their potential developmental level as decided by problem-solving while being guided by an adult or working with more advanced peers (Vygotsky, 1978).

Extending the notion to the classroom, CL is defined as an educational strategy in which students of different competence levels collaborate in a small group to achieve a shared objective. This explanation places a strong emphasis on learners sharing responsibility for both their own and one another's learning. As a result, the achievement of a pupil greatly is dependent on the achievement of other pupils, and vice versa. According to this viewpoint, CL depicts an environment where specific types of student interaction are anticipated to take place, which in turn activates the learning process (Gokhale, 1995). The same domain's zone of proximal development and Vygotsky's SCT serve as the foundation for the teaching method known as scaffolding instruction (ZPD) (Raymond, 2000). Based on the learner's ZPD, the scaffolding teaching technique delivers personalized help (Chang et al., 2002). In scaffolding teaching, a more experienced individual gives support or scaffolds to aid in the growth of the learner. The scaffolds make it easier for students to build on their past knowledge and assimilate the next material. The activities in scaffolding instruction are a little above what the student can accomplish on their own (Olson & Platt, 2000). The more competent person helps the learner through the ZPD by providing the scaffolds so that they may perform the tasks that they would otherwise be unable to do (Bransford et al., 2000).

Moreover, in foreign language teaching, self-assessment has garnered a lot of consideration as a means of assessing learners' language proficiency. Self-assessment is a method of assessment that enables the learner to investigate, advance, and assess his/her performance relative to the subject (Marzuki et al., 2020). Self-assessment is offered to help pupils take part in classes since it helps them to enhance individual goal-setting and learning by increasing their awareness of their individual learning (Ma & Winke, 2019). Students identify the criteria that apply to their work as a fragment of the self-assessment process and examine whether those requirements may be reached by their work (Tigchelaar, 2019). Additionally, in English language testing, self-assessment has been used extensively to assess learners' language ability in the domains of speaking,

reading, writing, and listening (Hung, 2019). According to Boud and Falchikov (1989), self-assessment is the process by which pupils evaluate their learning. Oscarson (1997) promotes approaches to learning assessment that are learner-centered. In support of this claim, he notes that the foundation of self-assessment is the idea that active pupil participation in the process of learning leads to the most effective learning.

Reading is one of the four essential language-teaching abilities that are highly important in language-teaching programs. According to Ewald (2007), reading has different purposes for different individuals. For some, it helps them grasp written words, and for others, it offers an opportunity to learn grammar and improve speaking skills. According to McNeil (2006), reading is a pleasurable activity that may provide the reader enjoyment. Understanding a text and drawing meanings rather than deriving meanings from separate phrases or words is the process of reading comprehension (Gilakjani & Sabouri, 2016). To considerably increase the language competency of EFL learners, Ahmadi and Gilakjani (2012) view reading comprehension as the foundation for language acquisition.

Likewise, the degree of understanding of a message or text is what is called reading comprehension. This comprehension is the result of how the printed words interact with information that exists outside of the text or message. The capacity to recognize words fast and easily is necessary for proficient reading (Ahmadi *et al.*, 2013). Language learning includes the capability to read and interpret a text quickly and effectively. The field has paid a lot of attention to how to effectively address reading comprehension because of its significance in second and foreign language acquisition (Seymour & Walsh, 2006).

In addition, it has been shown that, among other factors, motivation and anxiety have a significant influence on learning a foreign/second language (Etemadfar *et al.*, 2019). In its broadest sense, motivation is a multidimensional concept that includes both integrative and instrumental elements for accomplishing academic objectives. Buendgens-Kosten (2014) contends that encouraging pupils to read is a crucial element in enhancing reading comprehension skills when taking into account the function of motivation in second/foreign language reading comprehension.

Furthermore, reading motivation, according to Wigfield and Guthrie (1997), relates to the enormous amount of motivation that students can take into account while assessing their attitudes toward reading, whether they are good or negative. For example, students that read for enjoyment are extremely motivated readers who use tactics to aid their comprehension. These pupils are more likely to succeed in school because they frequently feel reading to be a crucial part of their daily life, and take on difficulties when reading.

Based on another definition proposed by Hairul *et al.* (2012), reading motivation is the significant reinforcement needed by students to concentrate on their opinions, whether they are favorable or unfavorable. Beginner students who enjoy reading are reported to be exceedingly motivated readers (Bakhshizadeh Gashti, 2018). All EFL students must therefore increase their motivation to read to comprehend written texts more effectively, which is in line with Seymour and Walsh's (2006) theory that motivation affects students' reading comprehension practices. Similarly, Wang (2008) and Rosenfield *et al.* (2001) verified that reading motivation might aid in improving the comprehension of written materials by foreign language learners as it encourages engagement in learning activities.

Meanwhile, anxiety is a significant additional component that might influence reading skills. Anxiety, which is characterized by apprehension, irritation, and concern is essential to language development (Asif, 2017). Elaborating on Alpert and Haber's (1960) difference between debilitating and facilitative anxiety, Scovel (1978) contends that the first one inspires students to make more attempts to lessen their anxiety. To escape the root of their crippling anxiety, people with debilitating anxiety avoid learning tasks. Anxiety may either aid learning and performance, in the sense that it has a good or negative effect on it (Alpert & Haber, 1960). The anxiety which readers go through while reading foreign language texts is called foreign language reading anxiety (FLRA) (Saito et al., 1999). When students have to read in a language that is not their native tongue, they experience anxiety and apprehension (Rajab et al., 2012). Anxiety interferes with linguistic skills like reading comprehension, increasing the strain on working memory (Markham & Darke, 1991).

## Review of literature

### Theoretical background

The use of CL, which is recognized as an efficient teaching strategy, is widespread around the world. According to Vermette (1998), the most significant and effective paradigm of educational change in recent decades has been CL. According to Slavin (1990a, b), CL refers to a paradigm of learning where students work in teams and are graded on their performance as a whole. According to Kagan (1994), CL is any activity that occurs within a group and involves the sharing of knowledge to learn. Within this paradigm, team members are in charge of developing their own expertise and helping the other team members learn. CL in student-centered teaching methods has been viewed as a successful way to improve learner retention, increase students' social and communication skills, and sharpen their critical thinking faculties (Johnson & Johnson, 1994).

The social constructivism theory, which forms the basis of the CL, holds that group learning may improve learning outcomes and cognitive development for students in ways that individual learning cannot (Slavin, 1990a, b). Astin (1993) also asserted that CL offers a social basis for learning that includes peer relationships, which greatly enhances the success of students. According to the social constructivist learning theory, learning in groups can provide results that are superior to learning alone (Vygotsky, 1978). Dillenbourg (1999a, b) presented various components of a successful CL, including a collaborative environment, a collaborative interaction, and a collaborative mechanism. According to Khan et al. (2014) and Armiati and Sastramiharja (2007), CL's primary objective is to encourage student involvement through peer review.

The word CL is a kind of teaching strategy in which pupils of various skill levels study in group settings and each pupil is in charge of his or her own development as well as that of the other group members toward a shared objective. To put it another way, in a CL setting, a person's success will promote the other members' success as a whole (Gokhale, 1995), since the CL allows each member the opportunity to express his or her own perspective and to hear that of the other members, which may broaden each person's own horizons (Kolodner & Guzdial, 1996). Topping and Ehly (1998) and Lisi and Golbeck (1999) supported the notion that each member of a CL group has the potential to transfer substantial value that is advantageous to all members. Such a procedure will

provide pupils with communication experiences that will enhance their metacognition and thinking abilities (Bonk & Reynolds, 1997).

Other researchers think that by creating their ideas, sharing them, getting rapid feedback, and reacting to queries and comments, this activity will assist individuals to build useful problem-solving abilities (Peterson & Swing, 1985). This idea holds that knowledge emerges via social interaction rather than only from a teacher delivering information to students in a single way. Other advantages stated by Millis and Cottell (1998) include the improvement of students' capacity to debate, negotiate, compromise, and think about the opinions of others. It indicates that the CL supports the students' intellectual depth and curiosity. An additional definition of CL is provided by Jacobs *et al.* (2002) as a set of guidelines and methods for enhancing student collaboration. The emphasis in this statement is on the fact that group projects are only one aspect of CL. Instead, deliberate attempts are made to assist students in having the most beneficial learning experience possible. These descriptions show that CL is a broad concept that covers a varied range of behaviors. In general terms, it happens whenever numerous people work on a specific task.

According to Vygotsky's CST, which informs scaffold education, social interactions are crucial to cognition growth. He proposed that engagement in social or culturally integrated activities promotes learning (Raymond, 2000). In the same way, learning does not occur in a secluded environment. Instead, social interactions that occur in purposeful circumstances have a noteworthy effect on learning. Children's thinking and situational interpretation are greatly influenced by their social interactions with individuals who are smarter or more capable than they are, as well as by their environment. By internalizing ideas based on her/his own perception of an action that takes place in social situations, a child develops their intellect (Ellis *et al.*, 2002).

Vygotsky also claimed that by adopting scaffolding practices and using the scaffolds in the ZPD, any kid could be effectively taught any topic. Teachers can encourage students to achieve above their present ability level by teaching ideas that are just above their existing knowledge and skill levels (Jaramillo, 1996). Using learning activities that work as interactive links to advance them to the next levels, students are supported and led. As a result, the learners create new understandings by building on what they already know with the assistance of those who are more skilled (Raymond, 2000). Growth and learning are hampered by the lack of social interaction and directed learning opportunities (Bransford *et al.*, 2000). Scaffolding serves as a point of reference for the ZPD's support. To put it another way, scaffolding in instruction and other settings that are related to sociocultural theory is not a fixed structure but rather a flexible support cautiously in tune with the children's progress to assist them in becoming autonomous (Wood *et al.*, 1976).

Another element is student assessment, which offers several advantages including involving students in their education and highlighting their areas for improvement. Given that it has an impact on the entire instructional process, assessment is a topic of utmost importance. According to Paris and Paris (2001), who made the case for the importance of assessment, we must understand both the process and the results of learning to determine what has been taught, what further work is necessary, and which skills are relevant. The increased desire for permanent learning has prompted a

reconsideration of the link between assessment and learning since learning and assessment are interconnected. The new era of assessment has been affected by this reevaluation (Dochy et al., 1999).

In foreign language teaching, self-assessment has drawn a lot of attention as a way to gauge learners' language proficiency. The focus in language teaching methodology changed from learning to the learner in the 1970s, and the student was seen as having an active role in the learning and being accountable for her/his own learning (Anderson et al., 2004). Similarly, LeBlanc and Painchaud (1985) suggested that learners should participate actively in the learning cycle, which includes assessment as it is seen as a fundamental part of the educational process.

Additionally, self-assessment is regarded as a worthwhile procedure for fostering autonomous language acquisition as it motivates students to evaluate their own learning and, in turn, keeps them committed to it (O'Malley & Pierce, 1996). Self-assessment, according to Henner-Stanchina and Holec (1985), is a method for evaluating students' performance while they are simultaneously creating and undergoing the evaluation process. A student assesses his or her performance concerning himself/herself using his/her own specific standards and in line with his/her own learning goals and expectations. The self-assessment goal is for the pupil to evaluate her/his performance in light of the assessment criteria. To put it another way, it offers some chances to learn what makes a good piece of work (Bound, 1995). Students must comprehend the standards against which they measure their performance to judge what makes a work poor or good to properly self-assess. They are encouraged by this internalization to pursue profound learning and to exercise more self-sufficiency (Brown et al., 1994). Engaging the learners with feedback from teachers may also be beneficial (Black & Wiliam, 2001).

For the classroom instructor, self-assessment is a desirable substitute for conventional kinds of assessment. It is a particular metacognitive technique that needs specific consideration. Also, it aids in the development of the qualities of a successful language learner, including the capacity to evaluate one's own performance and the capacity for self-criticism (Hedge, 2000). Moreover, it aids in the development of autonomous learning abilities by placing more of a focus on motivating students to set their own goals and track their progress (Brindly, 1989). Some who advocate for self-assessment contend that relying solely on teacher assessment leads to pupils not taking any ownership of their own learning and promotes dependence on the instructor (Ashraf & Mahdinezhad, 2015). According to Schwartz (1989), some benefits of self-assessment include encouraging student responsibility and engagement, allowing students to observe and consider how their peers see their contributions to the group work process, and emphasizing the development of students' judgment abilities.

Reading is a skill that is crucial to language development and is necessary for EFL students to perform successfully in higher education (Nasri & Biria, 2016). Out of all the key English language abilities, reading is the most crucial language skill in EFL settings (Nuttall, 1982). Understanding written symbols and their meanings is a difficult process that requires a lot of skill. The difficulty of the reading material, contextual effects, reading comprehension anxiety, motivation, and interest, word recognition speed or decoding speed, and medical issues are some elements that might affect reading comprehension ability (Lotfi Sin & Siahpoosh, 2020).



According to Puskorius (2011), reading comprehension refers to the understanding one gain from text. One of the fundamental objectives of reading instruction for students is the process through which meaning is produced. Reading comprehension, in Syatriana's (2012) definition, is the ability to comprehend what is read. It is a dynamic thinking process that depends on pupils' previous knowledge as well as their comprehension skills. Prior knowledge comprehension entails knowing the vocabulary, recognizing how words and concepts relate to one another, organizing ideas, identifying the author's intentions, and evaluating.

Similar to this, the ability to communicate through reading is described as requiring a cohesive process that entails interpreting words and sentences, applying previous knowledge that is pertinent to the text, and utilizing metacognitive and cognitive techniques to make sense of the text and understand the author's intended messages (Lotfi Sin & Siahpoosh, 2020). Previous knowledge, cognitive techniques, and meaning are unquestionably key terms in the reading comprehension process. To understand a text while reading, simple word meaning comprehension is insufficient (Alharbi, 2015). Effective readers must use strategies including connecting the text to their prior knowledge, summarizing the material, drawing inferences, and asking questions about the texts to acquire comprehension when reading. Making connections between what is read and what the reader previously knows and thinking critically about all the information till it is comprehended is the process of comprehension. The ultimate aim of teaching reading is comprehension (Kirmizi, 2010).

Meanwhile, a lot of people who learn a language may suffer foreign language anxiety (FLA), which is a distinctive sort of anxiety intimately associated with the acquisition of a language (Horwitz et al., 1986). While concern about learning a new language can occasionally be a positive motivator, debilitating anxiety, and its negative effects cannot be overlooked in teaching a language (Brown, 1994). The results of several studies on language learning have shown that each skill comes with its own anxiety (Chang, 2010). The FLRA is one of them (Çetinkaya, 2011). The first researchers to demonstrate that FLRA is a unique phenomenon connected to language acquisition were Saito et al. (1999). As an intervening factor that mediates between text decoding and the concrete processing of textual meaning, FLRA is thought to result from learners' trouble pronouncing words and sentences or from foreign writing systems (Horwitz et al., 1986).

Saito et al. (1999) recommend that instructors make pupils aware of the probability of reading problems and associated anxiety while offering reading assignments. Teachers are also advised to assist students to give up their impractical prospects of comprehending all they read and to build reading strategies that are more successful than literal translation to lessen anxiety. Many factors affect reading when one is anxious. Secondly, extreme anxiety may divert one's attentional capacity from reading. Second, anxiety might make it harder for the brain to use reading skills like letter and word identification. Finally, anxiety might affect a learner's ability to make decisions, such as selecting a technique or meaning (Sellers, 2000).

The motivation of EFL students to read may also have an impact on their reading accomplishment results. Wigfield et al. (2016) noted that the majority of respondents would undoubtedly include motivation when asked about the characteristics that affect specific degrees of achievement in any endeavor. According to Gardner (2006), more

motivated pupils will perform better than those who are less motivated. He also thought that if someone was motivated, they would put out more effort, persevere with their activities, concentrate on their responsibilities, have the desire to succeed, and enjoy their hobbies.

A key element in improving reading comprehension is motivation. According to Dornyei (2001), the definition of motivation is extremely complex and obscure since it is based on several different models and theories. Protacio (2012) noted that reading issues develop in part because people are not motivated in reading at first. Motivation arises when pupils are interested in and build a link with a subject that continues beyond the short term, according to Moley *et al.* (2011). Moreover, Guthrie and Wigfield (2000) assert that a person's own objectives, values, and views on the subjects, activities, and results of reading constitute reading motivation.

Two important consequences result from this distinction: The first one is that mixing many sorts of motivation into one complex process is how reading motivation is achieved. The second is the level of control people have over it since they may regulate, harmonize, and alter their reading motivation in terms of their validity, deservingness, and objectives (Namaziandost *et al.*, 2018). Reading quantity, reading success, and students' comprehension is all influenced by students' reading motivation (Guthrie & Wigfield, 2005). Guthrie *et al.* (1996) found a link between students' reading habits and their motivation to read. Guthrie and Wigfield (2005) emphasize the concept that reading motivation is domain-specific since it is a status that requires an emotional response unique to the reading content and would change depending on the variety of activities convening it.

### **Empirical background**

Several studies have looked into student participation in assessments. Butler and Lee (2010) investigated the efficacy of self-assessment in young EFL students. They discovered that the learners got better over time at assessing their own performance. Their findings indicated that self-assessment had marginally favorable impacts on the students' proficiency in English and level of confidence in their ability to acquire the language. In addition, skills-based self-assessment impacts on beginner, intermediate, and advanced learners were investigated by Brantmeier *et al.* (2012). Their research provided proof that there is a connection between the advanced learners' performance and the self-assessment instrument.

Weisi and Karimi (2013) discovered that self-assessment initiatives had a substantial impact on learners' desire and capacity to engage in self-assessment as well as on their outlooks on learning the English language. In a different study, Ratminingsih *et al.* (2018) investigated the influence of self-assessment on a group of participants' autonomy and writing performance. This allowed for the investigation of the effects of applying self-assessment methods on the writing abilities of two samples of Indonesian students in relation to three different text types. In terms of the study intervention, the experimental group's participants took part in self-assessment exercises whereas the control group's pupils were only subject to instructor assessment. The participants were given writing proficiency assessments as well as a validated scale for measuring learners' autonomy.



The study's outcomes showed that participants' writing abilities and learner autonomy both improved considerably thanks to self-assessment.

In another attempt, Sintayani and Adnyayanti (2022), showed that self-assessment, which included students in the process of assessing, had a favorable impact on students' speaking performance. The outcomes included a better understanding of one's skills and shortcomings, increased self-efficacy, and improved speaking abilities. To accomplish these beneficial outcomes, self-assessment must be conducted properly by taking into account the assessment criteria and procedures.

According to certain studies, scaffolding teaching is supported by the foreign/second language learning paradigm. Guerrero and Villamil (2000) investigated the scaffolding strategy employed by two EFL students to collaborate on improving a written piece in a ZPD setting. According to the research, the writer had a surprising predisposition to receive help during the revision process, and both students came to have a similar focus on the text revision. In a ZPD-activated environment, they proposed that peer interaction may direct pupils toward the mechanism of writing tasks.

In addition, Numpaque and Rojas (2010) listed a number of benefits of ZPD, such as improving students' word recall, subjecting them to enough cases of the target language, promoting correctness and fluency parallelly, promoting a positive attitude toward the L2, and reducing students' anxiety during the speaking performance. Similarly, Mohana (2014) wanted to theoretically evaluate the potential impacts of the ZPD-based strategy on students' oral skills. Participants in the research undertook a stretched process to reach the necessary competence level (self-assisted performance, assisted performance, recursion, and developed performance). Mohana's research indicated that the ZPD-based approach would be particularly beneficial for the students' oral abilities if the environment was supportive and group/pair work was successfully used with both strong and poor learners. In a different study, Zarandi and Rahbar (2016) found that scaffolding techniques were effective in enhancing speaking abilities in EFL students.

In their survey, Ahmadi Safa and Motaghi (2021) showed that, when compared to cognitive scaffolding techniques and non-scaffolding teaching, metacognitive scaffolding strategies significantly improved the listening development of EFL learners. The results also showed that the metacognitive scaffolding techniques were typically more well-received by the EFL learners and that they saw them as educational, novel, and successful for identifying issues, improving understanding, and raising preparedness.

The influence of CL on language acquisition has also been the topic of several research. In research by Bejarano (1987), it was shown that the CL group greatly outdid the whole-class approach in the test-total score and listening comprehension scale improvement. These results validated the relationship between the communicative method of teaching language and small-group collaboration. Chang (1995) performed experimental research in which he contrasted the usual whole-class technique with CL in a collegiate English reading course to observe the effect of CL on language development. With each approach, the subjects took a general exam and a summary test. According to the findings, students who participated in CL had average test scores higher than those of pupils who took typical instructor-centered classes.

Moreover, Chen (1999) looked into how conventional methods and the CL affected the growth of English learning in junior colleges. The results demonstrated that pupils

who participated in the CL in a meaningful way had higher marks on both the cloze test and the total test. Although roughly 5% of students did not like the CL environment and there was less contact in these circumstances, the study results by Roskams (1999) revealed that peer criticism was typically seen as beneficial.

Using a heterogeneous language proficiency group, Liang (2002) examined the impact of CL on the language acquisition of EFL junior high school students, their motivation to learn English, and the academic accomplishments of low and high-achievers. According to the findings of this study, the experimental group which used CL techniques outperformed the control group which practiced traditional TEFL strategies in both the motivational questionnaire and oral communicative competence. The results of the pupils' performance on the month-long school exam also demonstrated that the experimental group's academic accomplishments were on par with those of the control group.

Furthermore, Priyantini (2014) looked at how students felt about the CL and how it may motivate them to engage in more classroom discussions. The researcher thought that dealing with hesitant students while implementing interactive assignments in an academic environment is the most difficult problem in an EFL setting. To determine the attitudes of the students following collaborative activities in class, the researcher used an interview and the Gardner (1985) attitudes and motivation test battery questionnaire. The introduction of CL was seen favorably by 75% of students, who felt that it had increased their motivation to communicate and engage with others.

Avci and Adiguzel (2023) also investigated using mobile-blended CL in an EFL context. The findings showed that using the target language for real-world purposes while practicing English in a realistic environment helped students learn the language more quickly, increased their vocabulary knowledge and communication abilities, and helped them identify colloquial English. Also, instant chatting on a casual platform for education has a favorable impact on their work's quality and performance.

### **Statement of problem**

Reading is regarded as a skill of considerable value for several reasons. First, it allows learners to get access to a large number of additional language experiences. Second, it opens their eyes to the typical means of continuing their own education (Mirhassani & Toosi, 1996). So, reading comprehension would be vital to the process of language acquisition. By the way, it would be the duty of the instructor to introduce the pupils to various language techniques, approaches, and abilities. Moreover, observing the related literature displays that applying self-assessments, scaffolding instruction, and CL is useful in the EFL learning process. Simultaneously, few types of research have been accomplished on the utility of the aforementioned factors on language sub-skills and skills, the majority of them focusing on one or two skills. Thus, the current survey compared the effects of them on improving reading-related variables like comprehension, motivation, and anxiety. So, based on the mentioned goals, the subsequent questions were proposed:

1. How does applying CL, scaffolding instruction, and self-assessment affect EFL learners' reading comprehension differently?
2. How does applying CL, scaffolding instruction, and self-assessment affect EFL learners reading motivation differently?

3. How does applying CL, scaffolding instruction, and self-assessment affect EFL learners reading anxiety differently?

The next null hypotheses were also suggested in the research:

H01: CL, self- assessment, and scaffolding instruction do not have any substantial effect on EFL learners' reading comprehension.

H02: CL, self- assessment, and scaffolding instruction do not have any substantial effect on EFL learners' reading motivation.

H03: CL, self- assessment, and scaffolding instruction do not have any substantial effect on EFL learners' reading anxiety.

## **Methodology**

### **Participants**

The Preliminary English Test (PET) results led to the selection of 58 individuals for the study from a group of 71 EFL pupils. They were chosen from a private English teaching center in Abadan, Iran. They were female students aged 15 to 22 who had intermediate English skills. We chose respondents at random and distributed them into two groups of control and experimental, using the convenience sample method. Only females could be chosen as participants due to the institute's gender exclusivity.

### **Instruments**

#### ***Preliminary English Test (PET)***

To establish the homogeneity of language proficiency, the subjects were given the PET during the first session. The test was presented to 71 students, and the extreme scorers were disqualified from the study once the findings were analyzed. As the study began, the researcher was certain that all of the participants had intermediate English language proficiency.

#### ***Foreign Language Reading Anxiety Scale (FLRAS)***

The FLRAS was adopted to gauge the individuals' anxiety levels. Saito et al. (1999) created a questionnaire to test FLRA, and it is a five-point Likert type, meaning that each question is responded on a scale from 1 to 5. The scores will indicate the following, with 5 representing "strongly agree," 4 "agree," 3 "neither agree nor disagree," 2 "disagree," and 1 "strongly disagree." A scale from 1 to 5 is used to indicate different levels of anxiety. The FLRAS has 20 items, and scores between 20 and 100 are possible.

A higher score reflects the pupils' greater anxiety. The FLRAS demonstrated an acceptable level of reliability, according to Saito et al. (1999), with an internal consistency coefficient of 0.86. Two TEFL and psychology specialists verified the items' face and content validity. By determining the correlation between Foreign Language Classroom Anxiety Scale (FLCAS) and the FLRAS, Saito et al. evaluated the construct validity of the FLRAS. There was considerable overlap between the two constructs, as indicated by the correlation value of 0.64 ( $n = 383, p < 0.01$ ); however, 59% of the variance was not covered by the

two constructs. The FLRAS was used as both the pre-test and the post-test to determine the learners' anxiety levels.

#### ***Reading Comprehension Scale***

The students' reading comprehension was assessed using eight passages and 40 pertinent multiple-choice questions. To investigate the possible impacts of self-assessment, scaffolding instruction, and CL on students' reading comprehension, reading motivation, and reading anxiety, the pretest was re-administered as the post-test of the study. In reality, the test was utilized twice in this study, both as a pretest and post-test instrument with the same amount of items and duration (70 min). By changing the question order and choices on the post-test compared to the pretest, it was possible to prevent students from remembering their responses from the pretest and assess their ability to make the right decision after receiving treatment.

Five English teachers who revised the test and left comments on the items representativeness, clarity, and simplicity helped to measure the reliability and validity of the test by confirming its face and content validity in terms of the content validity index (CVI). Cronbach's alpha was run to decide the reliability of the pretest and post-test. The estimated values were 0.79 and 0.80, respectively.

#### ***Reading Motivation Scale***

The next instrument was the motivations for the reading questionnaire (MRQ), produced by Wigfield and Guthrie (1997). A translated version of MRQ was applied in this investigation. Four stages were employed to validate the translated questionnaire: first, the researchers and two other translators rendered the MRQ items in the participant's native tongue. Second, a professional translator rewrote the questionnaire in English. Finally, a comparable group was used for the pilot testing of the instrument. The translated instrument reliability was finally estimated to be 0.81.

The efficacy belief and competence constructs, the reading purpose, and reading social purposes are just a few of the three major motivational belief categories that are covered in this 54-item questionnaire that highlights many aspects of reading motivation. The 5-point Likert scale for this survey ranged from 1 (strongly disagree) to 5 (strongly agree). This survey was employed as a pre-test and also a post-test to measure the learners' motivation level in reading.

#### **Procedure**

The researcher used the PET to determine the homogeneity of the test-takers level of English proficiency. Fifty-eight people were chosen to represent the study's sample subject out of a total of 71 participants. Thereafter, two equal groups (the control and experimental) were chosen at random from among them. Afterward, both groups completed pretests to gauge their reading motivation, anxiety, and comprehension. Two groups were then treated with a variety of treatments. Learners in the experimental group got scaffolding instruction, self-assessment, and CL as treatment, whereas those in the control group received typical teacher-based instruction and assessment.

Before putting them to use, the assessment and instruction methods were first explained to the students in two groups. Collaborative Strategic Reading (CSR)

instruction was given to the experimental group of pupils. The goal of CSR, a group-based instructional technique, is to increase students' reading comprehension. This approach consists of four phases: previewing the text, clicking and clunking, getting the gist, and finally wrapping up. Cooperative learning and modified reciprocal teaching are combined in CSR, which was first generated by Klingner and Vaughn (1998). The CSR technique is used in four stages: Preview (before reading), Click and Clunk (while reading), Get the Gist (while reading), and Wrap Up (after reading).

According to Abidin and Riswanto (2012), the CSR idea is as follows: Students may guess what they will learn by using the preview stage to pique their curiosity and activate prior knowledge. Click and Clunk is a self-monitoring approach that helps students keep track of the words, concepts, and ideas they grasp, do not grasp or need to learn more about. Students use Get the Gist to identify the major themes of the reading and to validate their comprehension of the material. Students get the chance to use metacognitive techniques (plan, monitor, and evaluate) in the wrap-up stage to broaden their comprehension.

As previously stated, the teacher introduced the pupils the collaborative strategic reading before the treatment began. They began the CSR exercise once the teacher assigned the roles. The instructor began the preview strategy, the first phase of CSR, by asking the students a few questions to get them thinking and getting them ready for the activity. The preview step served to draw on existing information and encourage prediction of what will be read. Students then discussed their opinions and personal experiences with the subject in front of the entire class. Following that, each pupil read quietly to themselves. The group's leader then read the text aloud to the participants.

They had time to collectively debate and think about the material after the leader had read it. This section relates to the second CSR strategy, Click and Clunk, a fix-up technique for identifying difficult words or phrases. The goal of this stage was to encourage pupils to use their critical thinking. Clunk Expert identified any difficulty in the material during this period and shared it with their group members first to get input before sharing it with the class later. The teacher occasionally offered feedback, but mostly let the students lead the debate and only got involved when the pupils needed to be corrected. The instructor also served as the CSR's facilitator, checking each group individually and offering assistance as required.

The gist specialist informed the group on the key concept discovered and the most important details the text was conveying at the third stage. The other participants listened and, if necessary, making changes. The gist specialist first explained the major concept and most essential message in the text to the entire class, after which other students in the other groups expressed their opinions and finally sought to critique the author's points of view. This step was the most crucial and required them to read critically.

As previously said, the encourager's responsibility was to encourage engagement from every member. In addition, they had to produce a report for the teacher, summarizing the day's activities, including the key themes that had been addressed in the group. The instructor was given the responsibility of keeping track of the time and overseeing all activities that took place in the group settings. The teacher offered some questions when the reading was finished and encouraged the groups to quickly wrap up their discussion. This way the wrap-up stage of CSR ended.

In contrast, the control group's class followed the conventional teaching approach and received teacher-centered instruction. Naturally, the pupils did not participate in any group activities as a result. To draw on students' existing knowledge, the instructor first presented the subject and then went into further detail. Once a student had finished reading the paragraph, the instructor corrected any pronunciation errors before asking the class what the new words meant, providing synonyms and antonyms, and asking if there were any comprehension issues. There was no possibility for conversation with others in the control group. Also, there was only teacher-student communication. Each CSR and conventional teaching session lasted 70 min and was delivered throughout 12 sessions. Following that, the post-test was administered to both the experimental and control groups.

As for how self-assessment affects reading comprehension, the sample first took a reading comprehension test as a pretest to measure their reading comprehension skills and make sure there are not big differences in the reading comprehension level of the two groups. Following that, participants in the experimental group were required to complete 12 reading comprehension tests and a self-assessment checklist of reading strategies throughout 12 sessions to measure their reading proficiency. Although the control group merely got traditional assessment and instruction, the experimental group was given the self-assessment procedures. The checklist was used by the experimental group as a method of self-assessment. The experimental group received therapy using the checklist. Each time the experimental group took a reading comprehension test, they were given a checklist. There were three categories for reading comprehension on each checklist, including ones used before, during, and after reading.

The participants were instructed on how to keep track of their reading progress and how to employ reading tactics. The checklist of reading strategies used in the self-assessment included background knowledge brainstorming, questions on the text, recognizing the text's main and supporting ideas, summarizing, predicting, outlining, explaining what is understood, drawing connections between what is being read and background knowledge, making predictions, and verifying predictions. Yes/No columns and a comments part were included on the checklist.

The experimental group used a checklist to provide feedback to their teachers on their abilities to use reading techniques during reading comprehension tests, highlighting their successes and areas for improvement. At the bottom of the checklists, the instructor wrote some notes after receiving their comments on their use of techniques before, during, and after the reading comprehension test, and gave them the appropriate feedback. A reading comprehension test was then given to both groups as a post-test. Also, the treatment included reading comprehension tasks and a variety of scaffolding tactics for each as part of the scaffolding instruction of reading. The reading passages were gathered from various sources (Reading through Interaction by Hartmann *et al.* (2002)). The texts included a wide range of writing styles, including narratives, arguments, descriptions, and explanations. The texts were authentic and covered broad subjects. To preserve their organization within the permissible sequence of difficulty, they were arranged in ascending order from the less difficult to the more difficult ones.



To acquaint students with the features of the tasks and to prepare them for increasingly difficult ones, less difficult problems were given to students during the initial sessions. The task collection's degree of difficulty was another feature. The challenges in this collection were intended to be just a little more challenging than what students could do on their own. This was founded on the idea that if learners were given activities that were just a little beyond their current cognitive ability, their cognitive growth may be accelerated. As a result, they would need some scaffolding from their classmates or the teacher to succeed.

The type and amount of scaffolding provided for each assignment were adjusted to the developmental stage of the pupils (Poorahmadi, 2009). When pupils' capacity to function in similar circumstances improved, scaffolding was gradually eliminated. Scanning, skimming, warm-up exercises, L1 instructions, translation, modeling a desired behavior, lexical/verbal scaffolding, and/or consulting dictionaries were a few of the scaffolding techniques offered for the assignment.

The instructor also covered a variety of techniques, including determining word meanings by using context cues, word formation cues, or cognate practices; taking sentence and syntax structure into consideration by noticing the grammatical functions of unfamiliar words; examining reference words; and scanning the text for particular pieces of information (Barnett, 1989). In summary, scaffolded assistance was delivered via instructions, repetitions, helpful questions, and techniques like gestures and pauses (Antón, 1999). To resolve the issues and capture the major elements of the discussions, the group was ultimately invited to compare and contrast their understanding with one another. This would aid readers in reconstructing their knowledge, which was constructivism's primary objective.

On the contrary, the typical individual reading was applied to the control groups or the non-scaffolded group. Readers in the un-scaffolded group went on to read the piece privately as many times as they want and deal with the post-reading exercises according to their own unique learning styles. As a result, the pupils were not involved in any group activities. The lecturer introduced the topic before going into further depth to capitalize on the pupils' previous knowledge. Once a student had finished reading the paragraph, the teacher checked any pronunciation issues before asking the class what the new terms meant, offering synonyms and antonyms, and inquiring as to whether there were any comprehension issues. In the control group, there was no chance for interpersonal interaction. Finally, a reading comprehension test was given to both groups as a post-test.

After 12 sessions, with two sessions held every week, reading comprehension, motivation, and anxiety post-tests were run. The data were analyzed running SPSS software, version 22. ANCOVA was utilized to assess the effects of the cited factors on the learners' reading comprehension, motivation, and anxiety.

## Results

The results section contains both descriptive and inferential information on reading comprehension, reading, and anxiety. In the parts that follow, the results and data are described in detail:

The experimental group's mean score was 46.71, compared to the control group's mean score of 39.0, as shown in Table 1. It seems that the experimental group

**Table 1** Reading anxiety descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	39.00	8.35	28
2.00	46.71	10.66	28
Total	42.85	10.25	56

outperformed the control one on the post-test for reading anxiety. To determine if the differences between the reading anxiety post-tests of the two groups were noteworthy or not, a one-way ANCOVA test was conducted in the table below.

Data in Table 2 show that Sig is .00, which is less than 0.05, indicating that there were significant differences between the two groups' reading anxiety post-test results. The experimental individuals outperformed the control participants on the post-test for reading anxiety. The experimental group's test takers were able to reduce their reading anxiety by using the self-assessment strategy.

According to Table 3, the experimental group's and control group's respective mean scores are 15.28 and 11.64. In the reading comprehension post-tests, it shows that the experimental participants outperformed the control participants. The results of a one-way ANCOVA test show whether or not there were significant differences between the two groups' reading comprehension post-test results.

There are differences between the two groups on the reading comprehension post-tests, as deduced from Table 4 where Sig (.00) is less than 0.05. The experimental individuals did better than the control participants on the post-test for reading comprehension. EFL students' reading comprehension was enhanced by the use of self-assessment.

**Table 2** Reading anxiety inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	913.36 <sup>a</sup>	2	456.68	4.96	.01
Intercept	2592.24	1	2592.24	28.17	.00
pre	80.22	1	80.22	.87	.35
groups	848.36	1	848.36	9.22	.00
Error	4875.49	53	91.99		
Total	108,646.00	56			
Corrected total	5788.85	55			

<sup>a</sup> R squared = .158 (adjusted R squared = .126)

**Table 3** Reading comprehension descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	11.64	2.11	28
2.00	15.28	1.62	28
Total	13.46	2.62	56

**Table 4** Reading comprehension inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	244.45 <sup>a</sup>	2	122.22	48.53	.00
Intercept	15.35	1	15.35	6.09	.01
pre	58.66	1	58.66	23.29	.00
groups	162.29	1	162.29	64.44	.00
Error	133.47	53	2.51		
Total	10,530.00	56			
Corrected total	377.92	55			

<sup>a</sup> R squared = .647 (adjusted R squared = .633)

Table 5 shows that the mean score for the experimental group is 123.25 while the mean score for the control group is 88.53. It seems that the experimental participants outperformed the controls on the post-test measuring reading motivation. The following table was subjected to a one-way ANCOVA test to see if the differences between the two groups' reading motivation post-test results were statistically significant:

As can be seen in Table 6, where Sig is .00, which is less than 0.05, there were significant differences between the control and experimental groups' reading motivation post-test results. The experimental students did indeed outperform the control pupils on the post-test of reading motivation. It is possible to attribute the experimental group's increased performance on the reading motivation post-test to the benefits of the self-assessment approach.

According to Table 7, the mean score for the experimental group is 48.21, whereas the mean score for the control group is 40.32. In the post-test for reading anxiety,

**Table 5** Reading motivation descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	88.53	7.17	28
2.00	123.25	4.64	28
Total	105.89	18.51	56

**Table 6** Reading motivation inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected Model	17,616.81 <sup>a</sup>	2	8808.40	380.00	.00
Intercept	1073.73	1	1073.73	46.32	.00
pre	745.67	1	745.67	32.16	.00
groups	16,871.14	1	16,871.14	727.83	.00
Error	1228.54	53	23.18		
Total	646,790.00	56			
Corrected total	18,845.35	55			

<sup>a</sup> R squared = .935 (adjusted R squared = .932)

**Table 7** Reading anxiety descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	40.32	9.56	28
2.00	48.21	14.32	28
Total	44.26	12.70	56

the experimental group seemed to have performed better than the control group. To determine if the variations in reading anxiety post-tests between the two groups were statistically significant, the following table was treated to a one-way ANCOVA test (Table 8):

According to the preceding data, when Sig is .00, or less than 0.05, the differences in the reading anxiety post-tests between the control and experimental groups were significant. The experimental students did indeed do better on the post-test for reading anxiety than the control students. The benefits of the CL methodology can be attributed to the experimental group’s increased performance on the post-test for reading anxiety.

The experimental group’s mean score was 15.46, whereas the control group was 11.82, as shown in Table 9. The experimental group appears to have fared better on the reading comprehension post-test than the control group. The following table was subjected to a one-way ANCOVA test to see whether there were any statistically significant differences in the reading comprehension post-test scores of the two groups:

As indicated in Table 10, where Sig is .00, less than 0.05, there were big differences in the reading comprehension post-test scores between the experimental and control groups. Students in the experimental group outperformed those in the control group

**Table 8** Reading anxiety inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	996.01 <sup>a</sup>	2	498.00	3.34	.04
Intercept	2277.55	1	2277.55	15.31	.00
pre	123.85	1	123.85	.83	.36
groups	892.57	1	892.57	6.00	.01
Error	7882.96	53	148.73		
Total	118,619.00	56			
Corrected total	8878.98	55			

<sup>a</sup> R squared = .112 (adjusted R squared = .079)

**Table 9** Reading comprehension descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	11.82	2.34	28
2.00	15.46	1.71	28
Total	13.64	2.73	56

**Table 10** Reading comprehension inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	279.01 <sup>a</sup>	2	139.50	55.24	.00
Intercept	18.05	1	18.05	7.15	.01
Pre	93.22	1	93.22	36.91	.00
Groups	161.94	1	161.94	64.12	.00
Error	133.84	53	2.52		
Total	10,836.00	56			
Corrected total	412.85	55			

<sup>a</sup> R squared = .676 (adjusted R squared = .664)

on the reading comprehension post-test. It is reasonable to conclude that the benefits of employing CL have helped explain why the experimental group performed better on the post-test for reading comprehension.

The experimental group’s mean score was 124.21, whereas the control group was 89.17, as shown in Table 11. The reading motivation post-test appeared to show that the experimental group had outperformed the control group. The reading motivation post-test results for the two groups were compared using a one-way ANCOVA test in the following table to see whether there were any statistically significant differences:

As indicated in Table 12, where Sig is .00, less than 0.05, there were significant differences in the reading motivation post-test scores between the experimental and control groups. The experimental group students actually outperformed the control group pupils on the post-test of reading motivation. It is reasonable to assume that

**Table 11** Reading motivation descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	89.17	7.52	28
2.00	124.21	6.78	28
Total	106.69	19.04	56

**Table 12** Reading motivation inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	17,820.90 <sup>a</sup>	2	8910.45	220.99	.00
Intercept	1254.02	1	1254.02	31.10	.00
pre	635.88	1	635.88	15.77	.00
groups	17,333.88	1	17,333.88	429.91	.00
Error	2136.93	53	40.32		
Total	657,469.00	56			
Corrected total	19,957.83	55			

<sup>a</sup> R squared = .893 (adjusted R squared = .889)

the benefit of implementing CL helps to explain why the experimental group performed better on the post-test measuring reading motivation.

The experimental group’s mean score was 43.92, whereas the control group was 36.92, as shown in Table 13. The experimental group appears to have fared better on the post-test for reading anxiety than the control group. The findings of the reading anxiety post-test for the two groups were compared using a one-way ANCOVA test in the following table to see whether there were any statistically significant differences:

The results of the post-test on reading anxiety were significantly different between the experimental and control groups, as indicated in Table 14, where Sig is .00, less than 0.05. The experimental group students actually outperformed the control group students on the post-test for reading anxiety. We may infer that the benefits of scaffolding teaching helped the experimental group do better on the post-test for reading anxiety.

According to Table 15, the mean score for the experimental group was 15.67, whereas it was 12.07 for the control group. The reading comprehension post-test results seemed to show that the experimental group had outperformed the control group. The results of the reading comprehension post-test for the two groups were compared using a one-way ANCOVA test in the following table to check whether there were any statistically significant differences:

**Table 13** Reading anxiety descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	36.92	6.45	28
2.00	43.92	12.61	28
Total	40.42	10.54	56

**Table 14** Reading anxiety inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	1506.76 <sup>a</sup>	2	753.38	8.67	.00
Intercept	604.31	1	604.31	6.95	.01
pre	820.76	1	820.76	9.44	.00
groups	730.88	1	730.88	8.41	.00
Error	4604.94	53	86.88		
Total	97,642.00	56			
Corrected total	6111.71	55			

<sup>a</sup> R squared = .247 (adjusted R squared = .218)

**Table 15** Reading comprehension descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	12.07	2.56	28
2.00	15.67	1.82	28
Total	13.87	2.86	56



**Table 16** Reading comprehension inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	314.86 <sup>a</sup>	2	157.43	61.68	.00
Intercept	16.71	1	16.71	6.54	.01
pre	132.70	1	132.70	52.00	.00
groups	161.05	1	161.05	63.10	.00
Error	135.25	53	2.55		
Total	11,231.00	56			
Corrected total	450.12	55			

<sup>a</sup> R squared = .700 (adjusted R squared = .688)

**Table 17** Reading motivation descriptive statistics

Dependent variable: post			
Groups	Mean	Std. deviation	N
1.00	90.35	9.55	28
2.00	124.89	6.39	28
Total	107.62	19.19	56

Table 16 demonstrates significant differences in reading comprehension post-test scores between the experimental and control groups, where Sig is .00, less than 0.05. The experimental group students actually outperformed the control group pupils on the post-test of reading comprehension. It is acceptable to conclude that the benefits of adopting scaffolding teaching have helped clarify why the experimental group performed better on the reading comprehension post-test than the control group (Table 17).

In contrast to the control group, which had a mean score of 90.35, the experimental group had a mean score of 124.89. The experimental group seems to have done better on the post-test measuring reading motivation than the control group. The findings of the reading motivation post-test were compared between the two groups using a one-way ANCOVA test in the following table to see whether there were any statistically significant differences:

The results of the post-test on reading motivation between the experimental and control groups were significantly different, as indicated in Table 18, where Sig is .00, less than 0.05. The experimental group students actually outperformed the control group pupils on the post-test of reading motivation. It is reasonable to suppose that the benefits of scaffolding teaching have helped explain why the experimental group performed better on the post-test measuring reading motivation.

## Discussion

The current study goal was to ascertain how reading comprehension, reading motivation, and reading anxiety in EFL learners was impacted by self-assessment, CL, and scaffolding instruction. Self-assessment was highly significant in lowering reading anxiety and enhancing students' motivation and comprehension. In actuality, the self-assessment group outdid the control group. The study's findings indicated how using

**Table 18** Reading motivation inferential statistics

Dependent variable: post					
Source	Type III sum of squares	df	Mean square	F	Sig
Corrected model	17,371.65 <sup>a</sup>	2	8685.82	158.98	.00
Intercept	1297.87	1	1297.87	23.75	.00
pre	673.63	1	673.63	12.33	.00
groups	16,588.15	1	16,588.15	303.63	.00
Error	2895.47	53	54.63		
Total	668,923.00	56			
Corrected total	20,267.12	55			

<sup>a</sup> R squared = .857 (adjusted R squared = .852)

self-assessment might significantly improve students' motivation and reading comprehension. Self-assessment has also been shown to dramatically reduce students' reading anxiety. The students' sense of independence in reading comprehension tasks and knowledge of using practical reading methods in reading comprehension appeared to be greatly impacted by the self-assessment checklist's frequent deployment in the classroom. Self-assessment checklists could also assist students in developing their reading independence by allowing them to consider the strategies they employ on their own.

The study findings also demonstrated that training EFL pupils on how to use scaffolding strategies significantly improved their motivation and reading comprehension. Reading anxiety decreased when scaffolding instruction was used. This interactive strategy allowed EFL learners to interact with reading in more conversational ways while also practicing different learning techniques. It was discovered that using scaffolding techniques was a successful method to help EFL pupils improve their reading abilities. Using such exercises made it simpler to provide students with adequate orientation and thorough instructions. To complete the tasks and improve their comprehension, they were encouraged to participate and do their best.

This study also investigated how learners' motivation, anxiety, and reading comprehension were affected by CL. The study's findings made clear that this type of instruction helped students become more motivated and proficient readers. Also, it assisted them in reducing their anxiety. These results lead to the conclusion that CL has a beneficial effect on reading abilities. Also, because CL helps both parties, students had a good perception of it. This strategy undoubtedly lessened the pressure of reading assignments and encouraged student collaboration.

When comparing the study outcomes to other comparable studies, it was evident that the conclusions of this study supported those of other studies, demonstrating that the use of scaffolding instruction, CL, and self-assessment procedures were generally effective strategies for boosting motivation, reducing anxiety, and improving reading comprehension. These results agree with those of the following investigations.

The self-assessment results are consistent with research by Liu and Brantmeier (2019), whose study examined young Chinese English learners' self-assessments of their reading and writing skills as well as the relationship amid those assessments and objective writing and reading tests. Self-assessment reading and reading comprehension scores showed a strong correlation in correlational analyses. It was also discovered that there

was a substantial association between writing productivity scores and self-assessment writing scores. Results suggest that young students often appropriately assess their reading and writing proficiency in a foreign language.

Also, these results are consistent with Simtiyah's (2019) research. He looked at how self-assessment affected reading comprehension of narrative texts in his study. A test was the tool utilized to gauge the pupils' reading comprehension. The pretest and post-test results were used to collect the data. After adopting self-assessment, the researcher discovered a substantial modification in the learners' reading comprehension. The findings demonstrated that the self-assessment procedure was a successful method for enhancing students' reading comprehension, particularly of narrative texts.

These results also back up Chung *et al.* (2021). They wanted to know how self-assessment, goal-setting, planning, and reflection before and after revision affected students' writing performance and sense of self-efficacy. The pre- and post-writing self-efficacy survey, and pre-test-post-test of writing assessment were all completed by control and experimental students. On the post-test writing assessment, students in the experimental group showed statistically significant improvements and enhanced self-efficacy in the writing sub-domain of revision. According to these findings, involving pupils in a prearranged revision process that includes goal-setting, reflection, and planning prior to revision as well as reflection and self-assessment following revision, has a favorable impact on writing outcomes and self-efficacy.

Numerous studies that focus on CL support the study's conclusions. The results support those of Handayani *et al.* (2019). They looked at how to improve learners' reading comprehension and critical thinking by including CL in cyclic learning sessions. A reading comprehension pre-test was given before the teaching cycle began, and two post-tests were given after each teaching cycle. The findings demonstrated that collaboration considerably enhances students' ability to read critically and think critically.

Also, the research supports the conclusions of Rajaei *et al.* (2020), which examined the impact of non-collaborative and collaborative ways of reading skills instruction on Iranian EFL students' attitudes toward reading. The control group got no strategy teaching; the second group, the first experimental group, received CSR instruction; and the third group, the second experimental group, got non-collaborative reading strategy teaching. All three groups received reading comprehension assessments and questionnaires on reading attitudes both before the experiment and after it. One-way ANOVA findings displayed that while both experimental groups outdid the control group in reading comprehension and attitude toward reading, there were no statistically significant differences between the two experimental groups.

These results are also consistent with those of Anwar's (2020) research. He investigated how collaborative strategic reading affected pupils' reading skills in his survey. The pretest was completed before the CSR methodology was introduced to the class, and the post-test was completed following its introduction. There were two cycles in total. After using the CSR, the pupils' reading abilities improved. Students actively responded to the question by working in groups and paying attention to the teachers' explanations in terms of their participation (feedback).

Several research has shown that employing scaffolding as a teaching approach has favorable effects. These findings, for instance, are consistent with the Nourazar *et al.*

(2022) study, which looked at the effects of scaffolded metacognitive writing strategy teaching on Iranian intermediate EFL pupils' performance on IELTS writing task 2. Eighty intermediate EFL students—both male and female—were chosen to work toward this goal. The pretest was an IELTS writing problem 2 question, which served as a benchmark for the participants' writing abilities. During 4 weeks, for 6 h a week, the experimental group got scaffolded metacognitive strategy teaching in their writing practices. The control group received training in conventional writing techniques. Another IELTS writing assignment 2 questions were given as the post-test after the therapy to assess the participants' improvement as a result of the implementation of the treatment. According to the paired and independent samples *t* tests results, scaffolded metacognitive instruction significantly increased learners' metacognitive awareness, which helped them become better writers.

The results of the investigation of Sarmiento-Campos et al. (2022) are also supported by these findings. They looked at the influence of the scaffolding strategy on speaking proficiency in EFL learners. The teacher provided the scaffolding group with adaptable opportunities to practice their abilities, information, and learning strategies in various contexts and with various goals. The scaffolding tactics included acting out the dialogs, creating questions based on the words, and creating discussions based on the question cards and pictures. Contrarily, the control group participated in typical speaking classes utilizing conventional methods of education. The PET speaking portion then assessed the two groups' performances. The speaking post-test findings showed that administering scaffolding instruction to the experimental group was successful, with the experimental group considerably outperforming the control group.

The study by Kim (2021) inspecting the effect of scaffolding teaching on Chinese EFL pupils' English academic success and learning autonomy is also supported by the research. One hundred one college students in total took part in the study. The experimental group got scaffolding instruction whereas the control group got conventional instruction, the pre- and post-surveys were completed before and after the treatment to confirm the impacts of scaffolding teaching on English learning autonomy. These were the conclusions: in terms of EFL learner autonomy, scaffolding instruction outperformed traditional instruction. The pupils' academic success was statistically impacted by scaffolding teaching as well.

The study results can be confirmed by a variety of theory-based arguments. In the first place, this study exhibited that CL may be used to advance reading comprehension. Also, it provided evidence for the possible influence that CL may have on students' reading motivation and anxiety. The outcomes may be ascribed to the student's ability to optimize their peer interactions during CL, which was a crucial component of learning when the students were connecting with individuals in their surroundings and working with peers (Vygotsky, 1978). Collaborative reading gave students more possibilities to connect with one another and, as a result, more chances to get feedback from their peers when they made mistakes. Students took part in interactive activities like asking questions, brainstorming, listening to one another, eliciting confirmation, seeking clarification, summarizing paragraphs collectively, and collectively paraphrasing spoken words in natural and interactive contexts that were created by collaborative reading (Momtaz & Naji, 2012).

Also, students in the collaborative reading group had the chance to learn and get comments from their classmates. The fact that learning wakes up several internal developmental processes that are only able to function when the learner is actively interacting with others in his or her surroundings and working collaboratively with peers is a crucial aspect of learning. Consequently, to make the learners feel as a part of the environment when engaging in collaborative reading comprehension, the setting's authenticity and the participants' affinities are crucial components. In fact, group activities that promote students to use high-level cognitive skills like analyzing, explaining, synthesizing, and elaborating account for a significant portion of the value of collaborative reading (Vygotsky, 1978).

It should be noted that utilizing CSR to make all learning process decisions is urgent. This tactic can assist the instructor in teaching or explaining the topic to make it easier for the students to comprehend what they are learning during the learning process (Suhono & Sari, 2017). This method not only assisted students in improving their reading abilities but also resulted in better classroom relationships and dramatically reduced their anxiety levels (Babapour *et al.*, 2019). Instructors in CSR classes were also more likely to provide students feedback, and their primary motivations were to emphasize the value of teaching tactics in language instruction and investigate how recent advancements in this field might facilitate and support the process of reading comprehension (Nosratinia & Fateh, 2017).

The possibility of development will be boosted when the person collaborates with more competent peers, which is the most essential conclusion. In other words, with an expert's assistance, the person may accomplish more tasks, which is referred to as potential growth. ZPD emphasizes the connection between people and the social process in knowledge co-constructing within social situations as a result (Warschauer, 1997). As this is considered to be the fundamental principle of socio-culturalism, where learning is positioned in specific contexts and is impacted by the cultural and social activities one has encountered, one's capacity to do cognitive tasks independently is predicated on the past social process (Oxford, 1997). According to these considerations, CL naturally offered chances for students to grow their cognitive abilities by actively conversing with more experienced peers and maximizing their potential. Hence, with ZPD, more intelligent students may introduce fresh concepts to less intelligent ones, creating a learning environment where everyone benefits. Scaffolding was useful in learning scenarios and might be used as a mediating technique to encourage student's ZPD.

Motivational theories have developed models that include variables of one's achievement and peers' attainments into CL, as opposed to the competitive scoring structure of the traditional classroom, which can harm the academic effort by providing opportunities to show superiority over peers. The idea behind the CL structure is that students will be more motivated to support one another's achievement if they prioritize the group's accomplishment. Although this approach links motivation to CL, it assumes that cooperative efforts are driven by motives to attain the group's benefits (Dörnyei, 2001). Because of the intrinsic structure of CL, participants of the group were able to accomplish their individual and collective learning goals (Slavin, 1996).

Also, considering the lower anxiety levels in the CL group and in agreement with Barfield (2003), it can be concluded that language acquisition is, to a certain extent, an

emotional and psychological experience. Learning will suffer if students lack confidence (Jiang, 2009). A further claim made by Di Nitto (2000) is that the language area is an unsupportive and demanding atmosphere. Students appear to be apprehensive about making errors or losing their reputation in front of others due to the competitive nature of the conventional classroom environment, and they are sensitive to what they may perceive as criticism and rejection (Brown, 1994). This isn't the case with CL, though, since it gave students a sense of being much closer and more at ease without having the entire class or the teacher see them (Jiang, 2009). In small group interaction, CL eased students' entrance into the richer and more accommodating set of connections, in which a more comfortable and safer atmosphere could be formed, freeing them from the requirement for correctness at all costs (Long & Porter, 1985). According to Delucchi (2006), students participating in CL activities can discuss a variety of viewpoints since the environment is low-stress, which enhances learning.

To sum up, although students were traditionally considered to be passively receiving language instruction, CL, in contrast, highlights interaction and communication between students and between students and instructors. The role of the teacher is more like a facilitator rather than a controller in the classroom. A constructive learning atmosphere is created, which is more conducive to learning. Besides this, CL allows for personal growth, the enhancement of responsibility, and learner autonomy. The class activities were closely related to the learning goals, involving more diversity compared to the old language class where the dominant classroom activities were just to practice basic language skills, like translation and grammar (Zhang, 2010).

The following assumptions might be used as a foundation for thinking about how self-assessment affects learner' motivation, anxiety, and reading comprehension in light of the research's findings. Researchers discovered that pupils' self-assessment of their reading abilities contributed to such capabilities. According to the theory of Sadler and Good (2006), the purpose of self-assessment is to allow students to reflect on their work and make changes. It also develops metacognitive reading skills that help students evaluate their own work, and it effectively shifts students' perspectives and improves the learning environment.

Also, it was discovered that self-assessment is useful in the metacognition process when the teacher wants the students to document their own learning and preserve a record of their progress as well as comments for future learning. It is supported by Earl's (2013) theory on students' learning, which states that when students receive feedback, they become accustomed to a continuous cycle of adjustment and feedback, which makes learning more effective. Students also start to internalize the process of stepping back from their own learning and evaluating it in light of a variety of criteria, rather than just the teacher's assessment of its quality or accuracy.

With the help of Schwartz's (1989) succinct explanation, self-assessment allowed students to: gain a greater understanding of themselves, their work, and the subject matter to be learned; become aware of their strengths, needs, and progress; value the processes as well as the results of their learning; set appropriate learning goals and devise strategies for achieving them; participate actively in assessment and evaluation; and finally, develop a positive self-image. Self-assessment, which was strengthened by Boud *et al.* (1999), also gave students a ready-made framework for completing their work by



instructing them on which parts of their assignments to assess and providing a general sense of expected levels of work (what are weak and strong performance).

The outcomes for scaffolding teaching can be attributable to the following factors. Building on ground-breaking research by Bruner (1975), scaffolding was strongly linked to Vygotsky's SCT (Vygotsky, 1978), notably with his idea of the (ZPD). In actuality, scaffolding's core is the ZPD. The pedagogical push that scaffolding provides pupils allowed them to operate at a greater level of activity and is focused on just-in-time assistance. In fact, students are more likely to excel in learning a language when their instructors and classmates offer specific assistance when it's needed. According to Vygotsky (1981), autonomous performance is not how learners develop their talents. He contends that if scaffolding instruction were used in the classroom, the skills of the students would be displayed. He goes on to say that scaffolding instruction may help learners understand their strengths and address language acquisition challenges.

To put it another way, major teaching theories like constructivism and differentiated instruction guide the use of scaffolding. According to the theory behind differentiated instruction, education was given depending on the various requirements of the pupils. The support offered to students may be customized and altered in terms of the method, the content, and the outcome (Tomlinson, 2001). The advantages of differentiated teaching are also seen in Padmadewi and Artini's (2017) adaptation of the learning resources for an inclusive classroom with a range of pupils. The advantages of providing personalized support may be observed in the level of writing that the students produced, as evidenced by their results. How the instructor handled the assistance provided to the students also contributed to the effectiveness of the scaffolding. The constructivist ideology, which contends that students build their knowledge of the world through experience and reflection, served as another source of inspiration for the method of assisting the pupils (Hein, 1991).

The concept of scaffolding, which encourages independent learning, is also a powerful indicator of its effectiveness. Increasing one's ability to direct own learning is referred to as learning autonomy (Thanasoulas, 2016). With the use of scaffolding, students were progressively led to independence and the ability to care for themselves while studying. Students could develop a feeling of responsibility and self-assurance through scaffolding activities that promote learning autonomy because they were given the freedom to make decisions about matters that will help them become more independent (Padmadewi, 2016). As a result, scaffolding strategies must be carefully planned and put into practice in line with students' growth and development.

### **Conclusion and implications of the research**

According to the study's findings, using CSR in CL helped students improve their reading motivation, anxiety, and comprehension. It was also shown that the benefits of scaffolding teaching were notable in progressing the EFL pupils' reading motivation, anxiety, and comprehension skills. On the other hand, incorporating self-assessment into the reading process enabled the students to feel less anxious and motivated. Additionally, it resulted in improved reading comprehension performance.

The findings can have a variety of impressions on learners, trainers, and those who construct curricula. Secondly, it can give EFL/ESL/ESP teachers and syllabus designers

helpful insights into how to include a variety of teaching and assessment methodologies in lesson plans. Teachers may identify whether or not their pupils are taking part in the learning process by being familiar with the underlying idea of scaffolding teaching, CL, and self-assessment. It is suggested that language teachers change the focus of their instruction to the instruction in which their learners cooperatively work on task completion and receive adequate assistance from other proficient. This is in light of the study's findings. Additionally, encouraging problem-solving and cooperative learning in the classroom can hasten students' cognitive development.

In essence, Vygotsky used a cooperative learning approach. Thus, it is advised that the classroom be seen as a sociocultural context where an active engagement in the target language culture is encouraged. The results will help in the creation of materials for EFL students in general and for language students of various levels in particular. The idea that learning a language is a process of actively participating in the target language culture should be promoted in new textbooks. The diversity and complexity of the chosen text kinds will rise along with the learners' degree of ability. Therefore, further research with various gender and age groups is required to both confirm and reinforce these findings. Such studies will undoubtedly add to our knowledge of the nature of reading comprehension scaffolding.

Based on the findings, self-assessment significantly improved EFL pupils' motivation, anxiety, and comprehension. The findings of this study may help students understand the need for independent studying outside of the classroom for continual learning. This study can also assist students in becoming autonomous and self-directed students by enabling them to keep track of their own development, identify their own learning requirements and gaps, and accept accountability for their own learning. This study can also be beneficial for educators who like assisting their pupils in identifying effective learning techniques for themselves as well as their strengths and shortcomings. Self-assessment checklists can also offer instructors detailed data about their pupils' shortcomings and failures during learning, which can enable teachers to provide the learners with helpful feedback and suggestions.

Despite our best efforts, the research has limits and shortcomings that cannot be avoided. The study's limited sample size is the first restriction, and it is advised that future research include a larger participant pool. The use of solely pre- and post-tests for data collection is the other restriction. It is advised that future research use different tools to collect qualitative data that is more trustworthy and provides a deeper understanding of students' learning. This study limited its application to reading proficiency, hence it is encouraged that future research examines how similar strategies affect other abilities and subskills. Further studies are anticipated to look at additional levels in addition to the intermediate-level pupils who were the subject of this study. Also, a single gender and a certain age range were used to pick all of the participants. Other researchers might be used among different genders and age groups. Moreover, various assessment methods as peer assessment and portfolio assessment can be used in future studies.

#### Abbreviations

CL	Collaborative learning
EFL	English as a Foreign Language

PET	Preliminary English Test
ANCOVA	Analysis of covariance
SCT	Socio-cultural theory
ZPD	Zone of Proximal Development
CSR	Collaborative Strategic Reading
FLRAS	Foreign Language Reading Anxiety Scale
FLCAS	Foreign Language Classroom Anxiety Scale
CVI	Content Validity Index
MRQ	Motivations for Reading Questionnaire

#### Acknowledgements

Not applicable.

#### Authors' contributions

All authors have made substantial contributions to conception and design, acquisition of data, analysis and interpretation of data, and writing the manuscript. The author(s) read and approved the final manuscript.

#### Funding

This study is supported via funding from Prince Sattam Bin Abdulaziz University Project Number (PSAU 2023 /R/1444).

#### Availability of data and materials

The authors state that the data supporting the findings of this study are available within the article.

#### Declarations

##### Competing interests

The authors declare that they have no competing interests.

Received: 23 February 2023 Accepted: 10 March 2023

Published online: 17 March 2023

#### References

- Abidin, M. J., & Riswanto, R. (2012). Collaborative strategic reading (CSR) within cognitive and metacognitive strategies perspectives. *European Journal of Business and Management*, 4(1), 61–69.
- Ahmadi, M. R., & Gilakjani, A. P. (2012). Reciprocal teaching strategies and their impacts on English reading comprehension. *Theory and Practice in Language Studies*, 2(10), 2053–2060. <https://doi.org/10.4304/tpls.2.10.2053-2060>.
- Ahmadi, M. R., Ismail, H. N., & Abdullah, M. K. K. (2013). The relationship between students' reading motivation and reading comprehension. *Journal of Education and Practice*, 4(18), 8–17.
- Ahmadi Safa, M., & Motaghi, F. (2021). Cognitive vs. metacognitive scaffolding strategies and EFL learners' listening comprehension development. *Language Teaching Research*, <https://doi.org/10.1177/13621688211021821>.
- Alharbi, A. M. (2015). Building vocabulary for language learning: Approach for ESL learners to study new vocabulary. *Journal of International Students*, 5(4), 501–511.
- Alpert, R., & Haber, R. (1960). Anxiety in academic achievement situations. *Journal of Abnormal and Social Psychology*, 61(2), 207–215. <https://doi.org/10.1037/h0045464>.
- Anderson, H., Reinders, H., & Jones-Parry, J. (2004). Self-access: Positioning, pedagogy and future directions. *Prospect*, 19(3), 15–26.
- Antón, M. (1999). The discourse of a learner-centered classroom: Sociocultural perspectives on teacher-learner interaction in the second-language classroom. *The Modern Language Journal*, 83(3), 303–318.
- Anwar, A. K. (2020). The effect of collaborative strategic reading toward students reading skill. *Anglophile Journal*, 1(1), 21–28.
- Armiati, S., Sastramiharja, H. (2007). Collaborative Learning Framework. *Proceedings of SNATI, Yogyakarta* (pp. 42–48).
- Ashraf, H., & Mahdinezhad, M. (2015). The role of peer-assessment versus self-assessment in promoting autonomy in language use: A case of EFL learners. *Iranian Journal of Language Testing*, 5(2), 110–120.
- Asif, F. (2017). The anxiety factors among Saudi EFL learners: A study from English language teachers' perspective. *English Language Teaching*, 10(6), 160–173. <https://doi.org/10.5539/elt.v10n6p160>.
- Astin, A. (1993). *What matters in college*. Jossey-Bass.
- Avci, H., & Adiguzel, T. (2023). A Case Study on Mobile-Blended Collaborative Learning in an English as a Foreign Language (EFL) Context. *The International Review of Research in Open and Distributed Learning*, 18(7). <https://doi.org/10.19173/irrodl.v18i7.3261>.
- Babapour, M., Ahangari, S., & Ahour, T. (2019). The effect of shadow reading and collaborative strategic reading on EFL learners' reading comprehension across two proficiency levels. *Innovation in Language Learning and Teaching*, 13(4), 318–330.
- BakhshizadehGashti, Y. (2018). The effect of authentic and simplified literary texts on the reading comprehension of Iranian advanced EFL learners. *Iranian Journal of English for Academic Purposes*, 7(2), 32–44.
- Barfield, R. L. (2003). Students' perceptions of and satisfaction with group grades and the group experience in the college classroom. *Assessment & Evaluation in Higher Education*, 28(4), 355–370.
- Barnett, M. A. (1989). *More than meets the eye: foreign language reading*. *Language and education: Theory and practice* (p. 07632). Prentice-Hall Regents.
- Bejarano, Y. (1987). A cooperative small-group methodology in the language classroom. *Tesol Quarterly*, 21(3), 483–504.

- Black, P. & William, D. (2001). Inside the Black Box; Raising standards through classroom assessment. Retrieved from: <http://weaeducation.typepad.co.uk/files/blackbox-1.pdf>.
- Bonk, C. J., & Reynolds, T. (1997). Learner-centered web instruction for higher-order thinking, teamwork, and apprenticeship. In B. H. Kahn (Ed.), *Web-based instruction* (pp. 167–175). Educational Technology Publications, Inc.
- Boud, D., & Falchikov, N. (1989). Quantitative studies of student self-assessment in higher education: A critical analysis of findings. *Higher Education*, 18(5), 529–549.
- Boud, D., Cohen, R., & Sampson, J. (1999). Peer learning and assessment. *Assessment & Evaluation in Higher Education*, 24(4), 413–426.
- Bound, D. (1995). *Enhancing learning through self-assessment*. Routledge Falmer.
- Bransford, J., Brown, A., & Cocking, R. (2000). *How people learn: Brain, mind, and experience & school*. National Academy Press.
- Brantmeier, C., Vanderplank, R., & Strube, M. (2012). What about me? Individual self-assessment by skill and level of language instruction. *System*, 40(1), 144–160.
- Brindly, G. (1989). *Assessing achievement in learner-centered curriculum*. NCELTR.
- Brown, H. D. (1994). *Principles of language learning and teaching* (3rd ed.). Prentice Hall.
- Brown, S., Rust, C., & Gibbs, G. (1994). *Strategies for diversifying assessment in higher education*. Oxonion Rewley Press.
- Bruner, J. S. (1975). Peekaboo and the learning of rule structures. *Play: Its role in development and evolution* (pp. 277–285).
- Buendgens-Kosten, J. (2014). Authenticity. *ELT Journal*, 68(4), 457–459. <https://doi.org/10.1093/elt/ccu034>.
- Butler, Y. G., & Lee, J. (2010). The effects of self-assessment among young learners of English. *Language Testing*, 27(1), 5–31.
- Çetinkaya, Y. B. (2011). Foreign language reading anxiety: A Turkish case. *The Journal of Language Teaching and Learning*, 1(2), 44–56.
- Chang, M. (1995). Teacher-oriented learning vs Cooperative learning in English reading class. *Journal of Pingtung Polytechnic Institute*, 4, 271–277.
- Chang, A. C. S. (2010). Second-language listening anxiety before and after a one-year intervention in extensive listening compared with standard foreign language instruction. *Perceptual and Motor Skills*, 110(2), 355–365. <https://doi.org/10.2466/pms.110.2.355-365>.
- Chang, K. E., Sung, Y. T., & Chen, I. D. (2002). The effect of concept mapping to enhance text comprehension and summarization. *The Journal of Experimental Education*, 71(1), 5–23.
- Chen, H. (1999). A comparison between cooperative learning and traditional, whole-class method teaching English in a junior college. *Academic Journal of Kang-Ning*, 3, 69–82.
- Chung, H. Q., Chen, V., & Olson, C. B. (2021). The impact of self-assessment, planning and goal setting, and reflection before and after revision on student self-efficacy and writing performance. *Reading and Writing*, 34, 1885–1913.
- Delucchi, M. (2006). The efficacy of collaborative learning groups in an undergraduate statistics course. *College Teaching*, 54(2), 244–248.
- Di Nitto, R. (2000). Can collaboration be unsuccessful? A sociocultural analysis of classroom setting and Japanese L2 performance in group tasks. *The Journal of the Association of Teachers of Japanese*, 34(2), 179–210.
- Dillenbourg, P. (1999a). *What do you mean by collaborative learning? cognitive and computational approaches* (pp. 1–19). Elsevier.
- Dillenbourg, P. (1999b). *Collaborative learning: cognitive and computational approaches. Advances in learning and instruction series*. Elsevier Science Inc.
- Dochy, F., Segers, M., & Sluijsmans, D. (1999). The use of self-, peer and co-assessment in higher education: A review. *Studies in Higher Education*, 24(3), 331–350.
- Dörnyei, Z. (2001). *Teaching and researching motivation*. Longman.
- Dörnyei, Z. (2001). New themes and approaches in second language motivation research. *Annual Review of Applied Linguistics*, 21, 43–59.
- Earl, L. M. (2013). Assessment for learning; assessment as learning: Changing practices means changing beliefs. *Assessment*, 80, 63–71.
- Ellis, E., Larkin, M., & Worthington, L. (2002). *Executive summary of the research synthesis on effective teaching principles and the design of quality tools for educators*. University of Alabama, <http://idea.uoregon.edu/~ncite/documents/tehrp/tech06.html>.
- Etemadfar, P., Namaziandost, E., & Banari, R. (2019). The impact of different output-based task repetition conditions on producing speech acts among Iranian advanced EFL learners. *Theory and Practice in Language Studies*, 9(12), 1541–1549. <https://doi.org/10.17507/tpls.0912.10>.
- Ewald, J. D. (2007). Foreign language learning anxiety in upper-level classes: Involving students as researchers. *Foreign Language Annals*, 40(1), 122–142.
- Gardner, R. C. (1985). *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*. London: Edward Arnold.
- Gardner, R. (2006). The socio-educational model of second language acquisition: A research. *EUROSLA*, 6(1), 237–260. <https://doi.org/10.1075/eurosla.6.14>.
- Gilakjani, A. P., & Sabouri, N. B. (2016). Learners' listening comprehension difficulties in English language learning: A literature review. *English Language Teaching*, 9(6), 123–133.
- Gokhale, A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*, 7(1), 22–30.
- Guerrero, C. M., & Villamil, O. S. (2000). Activating the ZPD: Mutual scaffolding in L2 peer revision. *The Modern Language Journal*, 84, 51–68.
- Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. Kamil, P. P. Mosenthal, D. P. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. III, pp. 403–422). Lawrence Erlbaum Associates.
- Guthrie, J. T., & Wigfield, A. (2005). Roles of motivation and engagement in reading comprehension assessment. In S. G. Paris & S. A. Stahl (Eds.), *Children's reading comprehension and assessment* (pp. 187–213). Lawrence Erlbaum Associates.
- Guthrie, J. T., Van Meter, P., McCann, A. D., Wigfield, A., Bennett, L., Poundstone, C. C., Rice, M. E., Faibisch, F. M., Hunt, B., & Mitchell, A. M. (1996). Growth of literacy engagement: Changes in motivations and strategies during

- concept-oriented reading instruction. *Reading Research Quarterly*, 31(3), 302–332. International Reading Association.
- Hairul, N. I., Ahmadi, M. R., & Pourhosein Gilakjani, A. (2012). The role of reciprocal teaching strategy as an important factor of improving reading motivation. *Elixir Education and Technology*, 53(3), 11836–11841.
- Handayani, N. D., Mantra, I. B. N., & Suwandi, I. N. (2019). Integrating collaborative learning in cyclic learning sessions to promote students' reading comprehension and critical thinking. *International Research Journal of Management, IT and Social Sciences*, 6(5), 303–308.
- Hartmann, P., Mental, J., & Kirn, E. (2002). Reading through interaction. Los Angeles College: Mc Graw. Hill Contemporary Hedge, T. (2000). *Teaching and learning in language classroom*. Oxford University Press.
- Hein, G. E. (1991). *Constructivist learning theory*. Institute for Inquiry. Available at: <http://www.exploratorium.edu/ifi/resources/constructivistlearning.html>.
- Henner-Stanchina, C., & Holec, H. (1985). Evaluation in an autonomous learning schema. In P. Riley (Ed.), *Discourse and learning*. Longman.
- Horwitz, E. K., Horwitz, M. B., & Cope, J. A. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125–132. <https://doi.org/10.1111/j.1540-4781.1986.tb05256.x>.
- Hung, Y. (2019). Bridging assessment and achievement: Repeated practice of self-assessment in college English classes in Taiwan. *Assessment and Evaluation in Higher Education*, 44(8), 1191–1208.
- Jacobs, G. M., Power, M. A., & Loh, W. I. (2002). *The teacher's sourcebook for cooperative learning: Practical techniques, basic principles, and frequently asked questions*. Corwin Press.
- Jaramillo, J. A. (1996). Vygotsky's sociocultural theory and contributions to the development of constructivist curricula. *Education*, 117(1), 133–141.
- Jiang, Y. (2009). Applying group work to improve college students' oral English. *International Education Studies*, 2(3), 136–139.
- Johnson, D. W., & Johnson, R. T. (1994). *Leading the cooperative school* (2nd ed.). Interaction Book Co.
- Kagan, S. (1994). *Cooperative learning*. Kagan.
- Khan, A. A., Sultan, A., & Jan, F. A. (2014). Effects of perceived stressors and psychiatric morbidity on academic performance of university students. *Journal of Management Info*, 4(1), 147–156.
- Kim, L. N. Y. (2021). Effects of scaffolding instruction on Chinese EFL students' English learning autonomy and academic achievement. *Studies*, 231, 264.
- Kirmizi, F. (2010). Relationship between reading comprehension strategy use and daily free reading time. *Procedia Social and Behavioral Sciences*, 2, 4752–4756.
- Klingner, J. K., & Vaughn, S. (1998). Using collaborative strategic reading. *Teaching Exceptional Children*, 30(6), 32–37.
- Kolodner, J., & Guzdial, M. (1996). Effects with and of CSCL: Tracking learning in a new paradigm. In T. Koschman (Ed.), *CSCL: Theory and practice of an emerging paradigm* (pp. 307–320). Lawrence Erlbaum Associates.
- Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and genesis of second language development*. Oxford University Press.
- LeBlanc, R., & Painchaud, G. (1985). *Self-assessment as a second language placement instrument*.
- Liang, T. (2002). *Implementing cooperative learning in EFL teaching: Process and effects*. Unpublished Doctoral Dissertation National Taiwan Normal University.
- Lin, L. (2015). Exploring collaborative learning: Theoretical and conceptual perspectives. In: Investigating Chinese HE EFL Classrooms. Berlin, Heidelberg: Springer. [https://doi.org/10.1007/978-3-662-44503-7\\_2](https://doi.org/10.1007/978-3-662-44503-7_2).
- Lisi, R. D., & Golbeck, S. L. (1999). Implications of Piagetian theory for peer learning. In A. M. O'Donnell & A. King (Eds.), *Cognitive perspectives on peer learning* (pp. 3–37). Lawrence Erlbaum.
- Liu, H., & Brantmeier, C. (2019). "I know English": Self-assessment of foreign language reading and writing abilities among young Chinese learners of English. *System*, 80, 60–72.
- Long, M. H., & Porter, P. A. (1985). Group work, interlanguage talk, and second language acquisition. *TESOL Quarterly*, 19(2), 207–228.
- Lotfi Sin, S., & Siahpoosh, H. (2020). Looking at the impact of the flipped classroom model on reading comprehension of Iranian EFL learners. *Arabic Language, Literature & Culture*, 5(2), 14.
- Ma, W., & Winke, P. (2019). Self-assessment: How reliable is it in assessing oral proficiency over time? *Foreign Language Annals*, 52(1), 66–86.
- Markham, R., & Darke, S. (1991). The effects of anxiety on verbal and spatial task performance. *Australian Journal of Psychology*, 43(2), 107–111.
- Marzuki, A., Alek, A., Farkhan, M., Deni, R., & Raharjo, A. (2020). Self-assessment in exploring EFL students' speaking skill. *Al-Ta Lim Journal*, 27(2), 206–212. <https://doi.org/10.15548/jt.v27i2.613>.
- McNeil, L. (2006). The influence of extensive reading on reading comprehension and reading attitudes. *The Korea TESOL Journal*, 9(1), 89–107.
- Millis, B. J., & Cottell, P. G. (1998). *Cooperative learning for higher education faculty*. American Council on Education and Oryx.
- Mirhassani, A., & Toosi, A. (1996). The impact of word formation on reading comprehension. *Roshd FLT Journal*, 12(44), 59–66.
- Mohana, G. (2014). Enhancing the speaking skill of second language learners through Zone of Proximal Development (ZPD). *Golden Research Thoughts*, 3(11), 1–6.
- Moley, P., Bandré, P., & George, J. (2011). Moving beyond readability: Considering choice, motivation and learner engagement. *Theory into Practice*, 50(3), 247–253.
- Momtaz, E., & Naji, G. (2012). The impact of collaborative reading on Iranian EFL learners' development of reading comprehension. *Sino-US English Teaching*, 9(9), 1493–1501.
- Namazianlost, E., Hafezian, M., & Shafiee, S. (2018). Exploring the association among working memory, anxiety and Iranian EFL learners' listening comprehension. *Asian-Pacific Journal of Second and Foreign Language Education*, 3(20), 1–17. <https://doi.org/10.1186/s40862-018-0061-3>.

- Nasri, M., & Biria, R. (2016). Integrating multiple and focused strategies for improving reading comprehension and L2 lexical development of Iranian intermediate EFL learners. *International Journal of Applied Linguistics and English Literature*, 6(1), 311–332.
- Nosratinia, M., & Fateh, N. H. (2017). The comparative effect of collaborative strategic reading and content-based instruction on EFL learners' reading comprehension. *International Journal of Applied Linguistics and English Literature*, 6(6), 165–173.
- Nourazar, S., Kakvand, R., & Aliasin, S. H. (2022). The impact of scaffolded metacognitive writing strategy instruction on Iranian intermediate EFL learners' IELTS Writing Task 2. *Education Research International*, 2(3), 1–8. <https://doi.org/10.1155/2022/6297895>.
- Numpaque, N. R. B., & Rojas, M. A. G. (2010). TPR storytelling: A key to speak fluently in English. *Cuadernos De Lingüística Hispánica*, 15, 151–162.
- Nuttall, C. (1982). *Teaching reading skills in a foreign language*. Heinemann Educational.
- O'Malley, M. J., & Pierce, L. (1996). *Authentic assessment for English language learners: Practical approaches for teachers*. Addison Wesley Publishing Co.
- Olson, J., & Platt, J. (2000). *The instructional cycle. Teaching children and adolescents with special needs* (pp. 170–197). Prentice-Hall Inc.
- Oscarson, M. (1997). Self-assessment of foreign and second language proficiency. *Encyclopedia of Language and Education*, 7, 175–187.
- Oxford, R. L. (1997). Cooperative learning, collaborative learning, and interaction: Three communicative strands in the language classroom. *The Modern Language Journal*, 81(4), 443–456.
- Padmadewi, N. N. (2016). Techniques of promoting autonomous learning in the classroom. *Journal of Education and Social Sciences*, 3(1), 45–52.
- Padmadewi, N. N., & Artini, L. P. (2017). Teaching English to a student with autism spectrum disorder in regular classroom in Indonesia. *International Journal of Instruction*, 10(3), 159–176.
- Paris, S. G., & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36(2), 89–101.
- Peterson, P. L., & Swing, S. R. (1985). Students cognitions as mediators of the effectiveness of small-group learning. *Journal of Educational Psychology*, 77(3), 299–312.
- Poorahmadi, M. (2009). *The effect of employing scaffolding strategies and classroom tasks in teaching reading comprehension*.
- Priyantini, T. (2014). Students' attitudes towards cooperative learning in enhancing their motivation to speak. *Paper presented at the 61st TEFLIN International Conference, Sebelas Maret University, Solo, 7-9, 846-849*.
- Protacio, M. (2012). Reading motivation: A focus on English learners. *The Reading Teacher*, 66(1), 69–77.
- Puskorius, R. (2011). *Reading comprehension strategies for elementary students*. Retrieved December 1, 2017, from: <http://createcomputelearn.com/2013/08/08/comrehensionstrategies/>.
- Rajab, A., Zakaria, W. Z. W., Rahman, H. A., Hosni, A. D., & Hassani, S. (2012). Reading anxiety among second language learners. *Procedia-Social and Behavioral Sciences*, 66, 362–369.
- Rajaei, A., Talebi, S. H., & Abadikhah, S. (2020). The effects of collaborative and non-collaborative approaches to teaching reading strategies on Iranian EFL learners' reading comprehension and attitude toward reading. *Ikala, Revista De Lenguaje y Cultura*, 25(1), 55–73.
- Ratminingsih, N. M., Marhaeni, A. A. I. N., & Vigayanti, L. P. D. (2018). Self-assessment: The effect on students' independence and writing competence. *International Journal of Instruction*, 11(3), 277–290.
- Raymond, E. (2000). *Cognitive characteristics. Learners with mild disabilities* (pp. 169–201). Allyn & Bacon, A Pearson Education Company.
- Rosenfield, M., Leung, S., & Oilman, P. K. (2001). *The reading, writing, speaking, and listening tasks important for academic success at the undergraduate and graduate levels* (TOEFL Monograph Series, No. 21). Educational Testing Service.
- Roskams, T. (1999). Chinese EFL students' attitudes to peer feedback and peer assessment in an extended pairwork setting. *RELJ Journal*, 30(1), 79–123. <https://doi.org/10.1177/003368829903000105>.
- Sadler, P. M., & Good, E. (2006). The impact of self-and peer-grading on student learning. *Educational Assessment*, 11(1), 1–31.
- Saito, Y., Horwitz, E. K., & Garza, T. G. (1999a). Foreign language reading anxiety. *The Modern Language Journal*, 83(2), 202–218. <https://doi.org/10.1111/0026-7902.00016>.
- Sarmiento-Campos, N. -V., Lázaro-Guillermo, J. C., Silvera-Alarcón, E. -N., Cuellar-Quispe, S., Huamán-Romani, Y. -L., Apaza, O. A., & Sorkheh, A. (2022). A look at Vygotsky's sociocultural theory (SCT): The effectiveness of scaffolding method on EFL learners' speaking achievement. *Education Research International*, 1(2), 1–12. <https://doi.org/10.1155/2022/3514892>.
- Schwartz, M. (1989). *Research associate, for the learning and teaching office*. Retrieved from: <http://www.ryerson.ca/lt>.
- Scovel, T. (1978). The effect of affect on foreign language learning: A review of anxiety research. *Language Learning*, 28(1), 129–142. <https://doi.org/10.1111/j.1467-1770.1978.tb00309.x>.
- Sellers, V. D. (2000). Anxiety and reading comprehension in Spanish as a foreign language. *Foreign Language Annals*, 33(5), 128–143.
- Seymour, S., & Walsh, L. (2006). *Essentials of teaching academic reading*. Houghton Mifflin Harcourt.
- Simtiyah, U. (2019). *The impact of self-assessment toward reading comprehension in narrative text (An experimental research to the tenth grade students of SMK Sultan Fattah Salatiga in academic year 2018/2019)* (Doctoral dissertation, IAIN SALATIGA).
- Sintayani, N. L., & Adnyayanti, N. L. P. E. (2022). The analysis of self-assessment effect on EFL students' speaking performance. *Journal of Educational Study*, 2(1), 83–91.
- Slavin, R. E. (1990a). *Synthesis of research on cooperative learning: Educational leadership*. Oxford University Press.
- Slavin, R. E. (1990b). *Cooperative learning: Theory, research, and practice*. Prentice-Hall.
- Slavin, R. E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary Educational Psychology*, 21(1), 43–69.

- Suhono, S., & Sari, Y. A. (2017). Babbling stage construction of children's language acquisition on rural area lampung. *Jurnal Smart*, 3(2), 152-164. <https://doi.org/10.26638//472.203X>.
- Swain, M. (2000). The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. *Sociocultural Theory and Second Language Learning*, 97(1), 97-114.
- Syatriana, E. (2012). Developing the students' reading comprehension through cognitive reading strategies of the first year students of SMAN 16 Makassar. *Unpublished Under Graduated Thesis. TESOL Quarterly*, 19(4), 673-687.
- Thanasoulas, D. (2016). What is learner autonomy and how can it be fostered? *The internet TESL journal*, 6(11), 37-48.
- Tigchelaar, M. (2019). Exploring the relationship between self-assessments and OPIc ratings of oral proficiency in French. Dalam *Foreign language proficiency in higher education* (hlm. 153-173). Springer.
- Tomlinson, C. A. (2001). *How to differentiate instruction in mixed-ability classrooms?* Ascd.
- Topping, K., & Ehly, S. (1998). Introduction to peer assisted learning. In K. Topping & S. Ehly (Eds.), *Peer-assisted learning* (pp. 1-23). Lawrence Erlbaum.
- Vermette, P. J. (1998). *Making cooperative learning work: Student teams in K-12 classrooms*. Prentice-Hall Inc.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University.
- Vygotsky, L. S. (1981). The Genesis of Higher Mental Functions. In J. V. Wertsch (Ed.), *The Concept of Activity in Soviet Psychology* (pp. 144-188). Armonk: M.E. Sharpe.
- Wang, T. H. (2008). *The effects of modified collaborative strategic reading on EFL learners' reading comprehension [Unpublished MA Dissertation]*. National Changhua University of Education.
- Warschauer, M. (1997). Computer-mediated collaborative learning: Theory and practice. *The Modern Language Journal*, 81(4), 470-481.
- Weisi, H., & Karimi, M. (2013). The effect of self-assessment among Iranian EFL learners. *Procedia - Social and Behavioral Sciences*, 70(25), 731-737.
- Wigfield, A., & Guthrie, J. T. (1997). Relations of children's motivation for reading to the amount and breadth of their reading. *Journal of Educational Psychology*, 89(3), 420-432. <https://doi.org/10.1037/0022-0663.89.3.420>.
- Wigfield, A., Gladstone, J. R., & Turci, L. (2016). Beyond cognition: Reading motivation and reading comprehension. *Child Development Perspectives*, 10(3), 190-196. <https://doi.org/10.1111/cdep.12184>.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Child Psychology and Psychiatry and Allied Disciplines*, 17(2), 89-100.
- Zarandi, S. Z. A., & Rahbar, B. (2016). Enhancing speaking ability through intervening scaffolding strategies. *Theory and Practice in Language Studies*, 6(11), 2191.
- Zhang, Y. (2010). Cooperative language learning and foreign language learning and teaching. *Journal of Language Teaching and Research*, 1(1), 81-83.

### Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Submit your manuscript to a SpringerOpen<sup>®</sup> journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

---

Submit your next manuscript at ► [springeropen.com](https://www.springeropen.com)

---