



The Role of Socratic Dialogue in Engaging EFL Students in Grammar Lessons: Action Research

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ABSTRACT

Learning engagement is one factor fostering effective language acquisition, yet grammar instruction in EFL contexts often struggles to maintain students' active involvement. This action research (AR) investigated the role of Socratic Dialogue (SD) in enhancing grammar learning engagement with 13 intermediate-level EFL students aged 12-14 at a language centre. Data in this study were collected through two instruments: pre- and post-intervention questionnaires and focus group interviews with students of varying participation levels (low, moderate, high) to capture their perceptions. The results show that SD into classroom instruction fostered immersive learning experiences, encouraged self-directed grammar exploration through thought-provoking questions, and improved engagement across affective, behavioural, cognitive, academic, agentic, and social dimensions. Through interview analysis, despite different learning experiences during the treatment, all groups of students expressed positive perceptions toward the approach and claimed its benefits on their learning. The results suggest that integrating SD in

	<p>grammar instruction significantly enhances student engagement and fosters critical thinking. This approach shifts the focus from traditional teacher-centred methods, offering students more opportunities for active participation and independent learning.</p> <p>Keywords: action research, grammar, learning engagement, Socratic dialogue</p>
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Introduction

An individual who does not use grammar fluently may not make their ideas clear and coherent, either in spoken or written language (Khau & Nguyen, 2025). Therefore, mastery of English grammar is essential (Muhsin, 2016). Nonetheless, EFL students have been reported to face challenges in mastering grammar due to the linguistic differences between their native language and English (Atashian & Al-Bahri, 2018). EFL training and teaching in Vietnam still heavily depend on traditional grammar-based instruction and exam orientation. Hence, classroom activities focus on presenting language rules to students and preparing them for knowledge tests. They learn English through a tedious process of memorising structures and practising for the accurate use of the language (Hai, 2022). Students have insufficient time to hone their critical thinking and deepen their understanding, and to sharpen their communication skills (Mahoney et al., 2023). This explains the absence of cognitive interests among students in EFL classrooms. However, they learn grammar quietly and passively because, in their eyes, teachers are seen as knowledge holders and transmitters (Tran, 2022). The deficiency of active learning and classroom interaction makes grammar lessons dull and dry for them (Harrison, 2025).

To improve grammar mastery, many scholars, such as Hinkel (2024), argued that grammar should be taught separately to help students better understand grammatical structures and their meanings. In addition, the literature has revealed several methods to enhance grammar mastery, promote more student-centred learning, and increase classroom interaction (Liu et al., 2019), as well as a collaborative mobile English gaming approach (Chu et al., 2019). These include, for instance, integrating a game-based platform (e.g., Kahoot!) into the classroom (Ebadi et al., 2023) and Flipped EFL classes. However, some studies raise critical observations: even though flipped classrooms allow time for interaction and active learning, their effectiveness depends heavily on how class time is organized - in other words, a flipped classroom does not guarantee deep collaborative or reflective discourse (McCarthy, 2016). Bhuana (2022) identified shortcomings in

Kahoot, including technical issues and a lack of follow-up discussion or clarification after quizzes, which may limit its educational impact.

Given these limitations of current teaching strategies, this study seeks to investigate the role of Socratic dialogue (SD) in enhancing EFL student engagement in grammar lessons. SD is a philosophical group dialogue, guided by a facilitator and structured by a set of ground rules, in which participants collaboratively explore a fundamental question using a real-life example, to reach consensus and gain new insights (Knezic et al., 2010). The two following research questions were used to address this gap by exploring the effectiveness of SD as a pedagogical tool: (1) To what extent does SD engage students in grammar lessons? (2) What are students' perceptions of SD in grammar lessons?

Literature review

Conceptual Framework

Many Vietnamese teachers have admitted that grammar is crucial in English classes (Muhsin, 2016); however, there is still debate over how to make grammar instruction more effective. For example, they find it challenging to teach grammar communicatively, and consequently, EFL teachers often employ a teacher-centered approach, such as the Grammar-Translation Method (GTM) (Nguyen, 2024; Phan, 2018). EFL teachers tend to use a deductive approach to grammar teaching; this approach prioritises the explanation of language rules before providing examples (Nguyen & Tue, 2020), but it can be more effective in low proficiency classes (Harrison, 2025; Tran, 2022). These perspectives prompt that despite teachers' acknowledgment of the benefits of Communicative Language Teaching (CLT), grammar instruction tends to focus more on explicit rule explanations. Hence, this research aims to explore the use of SD to mitigate the issue and enhance Vietnamese EFL learners' use of grammar more actively and communicatively.

Depending on the educational context and purpose, Socrates' ideal of teaching is expressed in different forms, such as Socratic therapy, questioning, and dialogue (Suhardiana, 2019). For example, Socratic therapy (also known as "Socratic cognitive behavioral therapy") is a treatment for students with learning problems, e.g., anxiety and low self-efficacy. Socratic questioning is used when aspects of critical thinking and logical reasoning are employed to spark a need for deep, thorough understanding. SD marks a significant shift in thought-provoking conversations, in which all participants engage voluntarily to construct mutual knowledge. Regardless of how Socrates' teaching method is applied, the two phases mentioned above lie at the heart

of classroom instruction. To guide students' learning through these phases, the teacher needs to set up the target concepts with clear instructional strategies (Yengin & Karahoca, 2012). Additionally, rather than being an opponent of students' ideas, the teacher is more of a facilitator who helps them recognise their misleading conceptions with supportive goodwill (Balbay & Dogan, 2023).

This study also expects that EFL learners would benefit from the SD by enhancing their engagement in grammar instruction. Student engagement is defined as a multidimensional construct (Fredricks et al., 2004; Lam et al., 2014). Early studies often viewed student engagement as a two-dimensional construct, focusing on behavioral and affective (or emotional) aspects (Lam et al., 2014). Voelkl (1997) defined affective engagement as the degree of emotional responses to teachers, peers, academics, or the school environment, interest in learning, and an individual's sense of belonging and identification with the school or specific subject areas. Fredricks et al. (2004) regard behavioral engagement as active participation, sustained effort, focus, persistence, appropriate behavior, and the absence of disruptive actions. Later, scholars have added a third dimension to the concept of student engagement, cognitive engagement (Fredricks et al., 2004; Wang et al., 2011), which refers to the degree of a student's involvement in learning and this entails being reflective, strategic, and willing to invest the effort needed to understand complex concepts or master challenging skills (Fredricks et al., 2004; Lam et al., 2014). Later, academic engagement was also introduced into the construct of student engagement, whose indicators include the time spent on tasks and the number of credits earned toward graduation (Reschly & Christenson, 2012). Although this dimension slightly overlaps with the behavioral (Lam et al., 2014; Reschly & Christenson, 2012).

What is more, agentic engagement (Ree & Tseng, 2011) and social engagement (Wang et al., 2016) were also introduced to this construct. Finn and Zimmer (2012) defined social engagement as students' prosocial behaviors in the classroom and the quality of their interactions with peers regarding instructional content. Kassab et al. (2023) even included the socio-cultural dimension of student engagement, defined as a student's ability to broaden their perspectives and develop an understanding and appreciation of individuals from diverse social and cultural backgrounds.

Related Studies

Egbert et al. (2021) found that SD enhances student engagement in language classes and increases students' awareness of grammar structures. Similarly, Kelly (2013) used SD as a treatment to boost a learner's acquisition of the passive voice over three sessions. The post-test results at the final

meeting did not reflect the learner's improvement, although he could formulate basic rules after engaging in dialogical conversations in each learning session. It was due to some issues approved by the researcher (e.g., the participant's busy schedule and the lack of testing items). However, the approach promoted the participant's active learning by raising his awareness of the target-language structures. He remarked that SD-based instruction was interesting and valuable for his grammar acquisition.

To examine the impacts of the SD on younger learners, Muslimah (2022) conducted a pre-experimental quantitative study with a population of approximately 500 eighth-grade students who were encountering difficulties in learning English grammar. SD was conducted in flipped classrooms of around 30 students each. Students were required to watch YouTube videos that provided explicit and deductive instruction on the target grammar points before face-to-face meetings. In the meetings, teachers used provocative questions to facilitate students' mutual discussions and arguments, helping them obtain a thorough understanding of the target language. After three treatments, three significant points emerged in the results. First, students' performance on the post-test demonstrated the potential effectiveness of the technique in teaching grammar. Next, students' critical thinking was activated in their learning process. Lastly, students felt curious and comfortable in the classroom dialogues.

In brief, the impacts of SD on student engagement were partly revealed in the studies as by-products of their investigations. However, these findings still showed light at the end of the tunnel about the potential use of SD to raise students' learning engagement while optimising their learning performances in grammar classes.

SD is not a new concept in liberal education, but, as noted earlier, research on its use to cultivate student engagement in EFL grammar classes appears to be sparse. Although Muslimah's (2022) pre-experimental research successfully employed SD in flipped classrooms, the students' learning process focused mainly on language forms with insufficient meaningful engagement. Besides, the use of SD tends to be more about checking students' understanding of already-given content than about facilitating their self-exploration to generate their own knowledge.

Studies by Kelly (2013) and Muslimah (2022) reveal that participants pay close attention and exhibit positive attitudes when experiencing SD. To some degree, they successfully introduce the approach's potential adoption to foster students' involvement in grammar lessons. However, a well-rounded consideration of engagement-related factors needs to be investigated and measured to gain a deeper understanding of how it can be applied efficiently and how it is perceived in teaching and learning environments. For this reason, the researcher believes that AR with her inclusion as a participant,

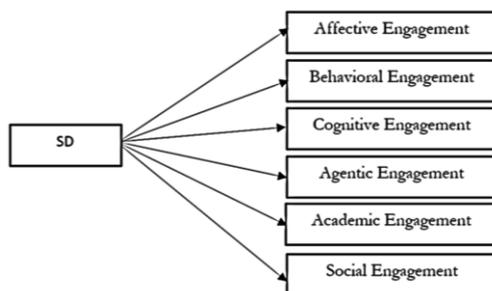
together with the collaboration of the target students and their teachers, may yield practical insights into the topic. Additionally, the use of AR enables the researcher to examine and develop the instructional blueprints synthesised in the previous section. To examine the application of SD from a new perspective, this study placed primary focus on student engagement through the researcher's ongoing action and reflection.

Regarding the Vietnamese EFL context, although the Socratic method is viewed as a practical approach, which encourages critical thinking by helping students focus on their thinking processes, Nguyen and Đàng (2023) found that little is known about using this method in EFL classes in Vietnam. These scholars have introduced this method in their work, but not empirical study.

In short, this study is pioneering research in using SD to engage students in learning grammar in EFL classes in Vietnam. Regarding engagement dimensions, the study found that earlier work focused on student engagement only in behavioral and affective dimensions. Lam et al. (2016) explored student engagement in terms of affective, behavioral, and cognitive engagement (three dimensions). However, Reeve and Tseng (2011) argue that the traditional three-component model of engagement (behavioral, emotional/affective, and cognitive) does not fully capture how students interact with instruction, so they added an academic dimension. Similarly, Wang et al. (2016) added social engagement to their study, including affective, behavioral, and cognitive engagement, as well as social dimensions. Recently, Kassab et al. (2023) even added agentic and socio-cultural dimensions to their study (five in total). Owing to a lack of universal agreement on the engagement construct (Moreira et al., 2020), this study's framework includes all six dimensions: Affective, behavioral, cognitive, agentic, academic, and social engagement in the context of using SD to enhance student engagement, as shown in Figure 1.

Figure 1

Conceptual Framework



Methodology

Research Design, Setting and Materials

This study adopted an action research (AR) approach guided by Kemmis and McTaggart's (1988). Specifically, this study included two primary Cycles. Each Cycle consisted of four stages: planning, acting, observing, and reflecting. The questionnaires were used to collect the participants' perceptions of their grammar lessons with and without the use of SD. In addition, focus-group interviews were conducted to gain deeper insights into their experiences with SD.

The research was conducted in a VSTEP B1 preparation class at an English language centre in Ho Chi Minh City (hereinafter, "the centre"). The researcher and collaborator, Ms. T worked at the centre as English teachers. The class was in charge by Ms. T, but due to the students' lack of participation and interest in grammar, she longed for an effective strategy to enhance their engagement in learning. She asked the researcher to deliver grammar lessons to her students since the idea of using SD for this purpose originated from the researcher. She also offered to observe the class and collaborate with the researcher on this study to learn about the teaching strategy.

Following the centre's English-training curriculum, the class used the textbook *Access 4B* (published in 2016 by Express Publishing) as the primary material. In the textbook, each module includes six units (A-F). Units A and B focus on language knowledge (including grammar). Units C, D, E, and F focus on communication skills and cultural awareness. These units were taught over four 90-minute sessions. The distribution of these units was as follows: Session 1 - Unit A; Session 2 - Unit B; Session 3 - Units C and D; and Session 4 - Units E and F. Grammar was taught in Units A and B. Students learn grammar through three successive phases: input exposure, grammar focus, and practice. Grammar was taught holistically, integrating other skills, and every lesson lasted 90 minutes.

Participants

The study employed purposive sampling, as it allows the researcher to determine which information is necessary to collect and to plan to identify appropriate people willing to share their knowledge and experience (Bernard, 2017). Based on this perspective, the VSTEP B1 preparation class, including 15 learners aged 12–14, was chosen. In the first meeting, before distributing the consent forms to the learners, the researcher gave them time to raise questions about this AR plan. All the learners agreed to participate and signed

the consent forms. However, due to the infrequent attendance of some learners (being absent for more than two sessions during Pre-intervention or Cycle 1), two learners were not eligible to continue participating in the study. The pseudonyms are used to protect their identities. The participants' backgrounds varied: the majority majored in General Medicine Tourism, while one each majored in Business Administration, Computer Science, and Information Technology. Their English proficiency was at the A2 level according to the six-level scale of the Common European Framework of Reference for Languages (CEFR). Of the thirteen participants, 60% had studied English for 5 to 10 years, while 40% had studied it for 11 to 15 years.

Research Instruments

A four-point Likert scale (without the midpoint) was considered for application. The continuum of responses was assigned with 1 = “strongly disagree”, 2 = “disagree”, 3 = “agree”, and 4 = “strongly agree”. This questionnaire was distributed to the students prior to the first cycle (pre-survey) and at the end of the last cycle (post-survey) to measure the influence of SD on student engagement. The authors translated the English questionnaire into Vietnamese. A Vietnamese English teacher was invited to help evaluate the translated version. She reviewed all six dimensions of engagement in both languages and approved the translated version. The pre-survey results were also used to identify engagement-related problems students faced before the SD intervention. This helped the researcher outline teaching strategies for the action. The questionnaire design is presented in Table 1.

Table 1

Structure of Questionnaire Design

Engagement dimensions	Number of items	Sources
Affective Engagement	6	
Behavioral Engagement	7	SESI, Lam et al. (2014) CEI, Wang et al. (2014)
Cognitive Engagement	7	
Agentic Engagement	5	Amerstorfer and Freiin von Münster-Kistner (2021)
Academic Engagement	7	Reeve and Tseng's (2011)
Social Engagement	7	Fredricks et al. (2016)

The questionnaire was piloted in another class at the centre with features like those of the target class (e.g., level, age range, characteristics, and learning purposes). Hard copies of the questionnaire written in both languages were distributed directly to seven volunteer students in the pilot class. They were encouraged to ask questions about any items that were unclear to them while answering the questionnaire. Besides, they were invited to provide opinions on the questionnaire design (including the form, content, and rating scale) after completing it. According to students' feedback, the form was easy on the eyes, the content was generally easy to understand, and the four-point scale (as described above) caused no discomfort. There was a minor issue with language use that confused them. The phrase "feel dedicated" in the item [*I feel dedicated to class activities*] was unclear for the pilot students. When I replaced it with the phrase "try to do my best", the item became understandable to them. Hence, it was finally adjusted to "I try to do my best-in-class activities". Table 2 illustrates Cronbach's Alpha (α) of the pre-survey and post-survey.

Table 2

Internal Consistency Reliability of Results for Pre- and Post-surveys

Engagement dimensions	Pre-survey		Post-survey	
	α	N of Items	α	N of Items
Affective engagement	.941	6	.903	6
Behavioral engagement	.886	7	.832	7
Cognitive engagement	.823	7	.803	7
Agentic engagement	.792	5	.828	5
Academic engagement	.886	7	.821	7
Social engagement	.792	7	.847	7
Overall	.947	39	.873	39

As shown in Table 3, the questionnaire consists of 39 items, with internal consistency reliability values of .947 for the pre-survey and .873 for the post-survey, both exceeding the standard value of 0.70 (Nunnally, 1978).

Procedure and Data Collection

Pre-action

First the study began with problem identification. The purpose of this task was to identify problems related to student engagement. The researcher observed the class in a normal grammar-learning session (delivered by the collaborator, Ms. T) before the action process. Additionally, he conducted a pre-survey, using a paper-based questionnaire, to estimate the students' extent of agreement in all dimensions before the intervention of SD.

Second, the study selected the lessons to be studied. Table 3 presents the research lessons delivered in two action cycles. The teaching content was considered by the researcher and the collaborator before the action process. The selection of these lessons was based on three criteria: (1) consistency with the students' level and the training program, (2) equalisation and connection between lessons, and (3) typical grammatical area for the improvement of engagement.

Table 3

Lessons for Action Cycles

Action cycle	Lesson	Grammatical Content
Cycle 1	Unit 9A	Reported speech: reported statements
Cycle 2	Unit 9B	Reported speech: patterns of introductory verbs

Regarding equalisation and connection between lessons, equalisation among action lessons was also put into consideration. The researcher was aware that unbalanced volume and content inconsistency between lessons might affect the reliability of the measurement and comparison of student engagement.

Regarding typical grammatical areas for improvement, the researcher and the collaborator, based on their teaching experiences, found reported speech challenging to engage students due to its complex structures and rules. Besides, it required them to interpret the event based on different contextual aspects (e.g., time, location, and the interlocutor). As stated by Cong (2023), Vietnamese students typically view reported speech as a complex and dry area of grammar.

Regarding the instructional framework, in connection with the blueprints for classroom instruction (presented in Chapter 2, section 2.4), the instructional framework was constructed. Each grammar lesson lasted about 90 minutes, during which students explored language features through a successive process: pre-dialogue, dialogue cycle, and post-dialogue.

To guide the students' discovery of grammar in the dialogue cycle, knowledge was broken down into minor focal points for exploration. In each focal point, negative evidence was provided as the topic for the students to discuss with each other in small groups to answer three questions: (1) what types of errors occur, (2) why they are wrong, and (3) how they can be corrected. After allotted time, all groups participated in a class debate, exchanging ideas and arguing constructively and respectfully. The collaborator also joined the debate as another party to regulate its flow. Depending on students' on-the-spot performance, they were challenged with concepts that were the opposite of those they had previously studied to consolidate or extend their understanding. To this end, assumption-making questions (e.g., "if... then...?", "is it possible if...", "what if...?", or "how about...?") were used for comprehension-checking, opening more discussions, and simulating further knowledge exploration. When all parties (i.e., groups of students and the teacher) achieved consensus on the point, the next focal point was brought into the dialogue.

Action Cycles

Cycle 1: This cycle provided students with their first experience with SD. Based on the analysis of data collected during the pre-action period, the first research lesson was designed. The focal students' behaviors were scored in the observation checklist by the collaborator. Friendly conversations with students were conducted after class to investigate their learning experiences. Additionally, discussions with the collaborator were arranged to assess the lesson outcomes and develop ideas for teaching improvement.

Cycle 2: This cycle is connected to the first cycle in that the analysis results of the previous cycle were reviewed to determine a new plan for the current cycle. Learning activities that fit well with the students were used again. However, those challenging their understanding were carefully considered. When they only caused temporary confusion for the students but ultimately benefited them, some alterations were made. In contrast, when they posed problems to the students without any possibilities for improvement, they were replaced or eliminated. The previous cycle's action process was repeated, and the results of the two cycles were compared to determine whether there was an improvement in SD's effectiveness in student engagement. Problems identified in Cycle 1 were effectively solved, and the study's initial expectations were met in Cycle 2.

Post-action

Aside from summarising all data collected across all cycles, the researcher also collected students' responses in the post-survey questionnaire to measure improvements in their learning engagement. In addition, focus group interviews with students were conducted to learn about their experiences and perceptions of learning grammar through SD. The interviews were recorded to support the researcher's review and transcribing work.

Data Analysis

Statistical analysis was performed on the data from the two surveys (before and after the action) using the Statistical Package for Social Sciences. This analysis involves examining the mean score (M) and standard deviation (SD) of each item and each dimension of engagement in both surveys. The study followed Altman and Bland (2005), where $SD \leq 0.5$ indicates low variability (consistent responses), $0.5 < SD \leq 1.0$ indicates moderate variability (moderate variation), and $SD > 1.0$ indicates high variability (widely varied responses). This study uses the guidelines by Upara and Chusanachoti (2023) to interpret the mean scores on a four-point Likert scale: 1.00-1.74: Strongly Disagree; 1.75-2.49: Disagree; 2.50-3.24: Agree; and 3.25-4.00: Strongly Agree. For a significant difference, the p -value must be smaller than 0.05, and the Confidence interval (CI) must not include zero (Hair et al., 2017).

Findings and Discussion

To What Extent Does SD Engage Students in Grammar Lessons?

Table 4 presents the M and SD of items surveyed in both surveys.

Table 4

Descriptive Analysis of Surveys Before and After Use of SD

Engagement Dimension	Before Use of SD			After Use of SD	
	N	M	SD	M	SD
Affective engagement	13	2.27	0.94	3.05	0.79
Behavioral engagement	13	2.48	0.99	3.19	0.63
Cognitive engagement	13	2.27	0.91	2.78	0.61
Agentic engagement	13	2.08	0.87	3.25	0.61
Academic engagement	13	2.67	1.04	3.37	0.57
Social engagement	13	2.42	0.90	3.16	0.78

As shown in Table 4, all six engagement dimensions recorded higher mean scores after using SD. The total percentages in a frequency distribution may not equal 100% due to rounding. The indices in the Before-use of SD and the After-use of SD are presented as follows: Affective engagement: $M = 2.27$ to 3.05 , $SD = 0.94$ to 0.79 . Behavioral engagement: $M = 2.48$ to 3.19 , $SD = 0.99$ to 0.63 ; Cognitive engagement: $M = 2.27$ to 2.78 , $SD = 0.91$ to 0.61 ; Agentic engagement: $M = 2.08$ to 3.25 , $SD = 0.87$ to 0.61 ; Academic engagement: $M = 2.67$ to 3.37 , $SD = 1.04$ to 0.57 ; and Social engagement: $M = 2.42$ to 3.16 , $SD = 0.90$ to 0.78 . On average, students tend to agree with the statements in the questionnaire. The reduction in SD after the intervention suggests greater consistency in participants' responses.

Table 5 presents the results of paired-samples t -tests comparing pre- and post-intervention scores across the six engagement dimensions.

Table 5

Paired-Samples t -Test Results

Engagement Dimension	M Difference	SD	SD Error	t (df)	p -value & 95% CI [Lower, Upper]
Affective Engagement	0.78	0.94	0.26	$t(12) = 3.01$.011 [0.22, 1.35]
Behavioral Engagement	0.70	0.69	0.19	$t(12) = 3.69$.003 [0.29, 1.12]
Cognitive Engagement	0.51	0.45	0.13	$t(12) = 4.04$.002 [0.23, 0.78]
Agentic Engagement	1.17	0.46	0.13	$t(12) = 9.15$.000 [0.89, 1.45]
Academic Engagement	0.70	0.80	0.22	$t(12) = 3.17$.008 [0.22, 1.19]
Social Engagement	0.75	0.76	0.21	$t(12) = 3.53$.004 [0.29, 1.21]

As shown in Table 5, the study used Paired-samples t -tests to compare pre- and post-intervention engagement scores across the six dimensions on the four-point Likert scale. Paired samples t -tests for all six engagement dimensions showed significant increases from pre- to post-intervention. The results for each dimension are: Affective Engagement: The mean increased by 0.78, $t(12) = 3.01$, $p = .011$, 95% CI [0.22, 1.35]; Behavioral Engagement: The mean increased by 0.70, $t(12) = 3.69$, $p = .003$, 95% CI [0.29, 1.12]; Cognitive Engagement: The mean increased by 0.51, $t(12) = 4.04$, $p = .002$, 95% CI [0.23, 0.78]; Agentic Engagement: The mean increased by 1.17, $t(12) = 9.15$, $p = .000$, 95% CI [0.89, 1.45]; Academic Engagement: The mean increased by 0.70, $t(12) = 3.17$, $p = .008$, 95% CI [0.22, 1.19]; Social Engagement: The mean increased by 0.75, $t(12) = 3.53$, $p = .004$, 95% CI [0.29, 1.21].

The quantitative findings show that SD significantly improved all six engagement dimensions - affective, behavioural, cognitive, agentic, academic,

and social. The study's results support previous findings that emphasise that active and meaningful participation, rather than passive reception, reinforces grammar mastery (Khau & Nguyen, 2025; Hai, 2022; Tran, 2022) and that traditional approaches often fail to sustain learner interest (Harrison, 2025).

Both Lam et al. (2014) and Wang et al. (2014) highlight that active participation and classroom effort are key components of behavioral engagement. SD encourages active student participation by fostering critical discussion, asking questions, and encouraging students to share ideas. These dynamics foster behavioral engagement by requiring students to take an active role in the learning process.

Additionally, according to Amerstorfer and Freiin von Münster-Kistner (2021), affective engagement is heavily influenced by teacher-student relationships. In the context of SD, students' emotional or affective connection to the teacher and the learning process are enhanced. As SD promotes open communication, students feel more emotionally invested in the content.

The most notable improvement was in agentic engagement ($M = 1.17, p < .001$), supporting Mahoney et al.'s (2023) view that SD empowers learners to influence classroom activities by asking questions, giving suggestions, and expressing preferences. Tseng and Reeve (2013) found that agentic engagement predicts student success since it encourages students to take responsibility for their learning, such as setting learning goals, seeking clarification, and making learning relevant.

The gains in cognitive ($M = 0.51, p = .002$) and academic engagement ($M = 0.70, p = .008$) align with the literature emphasising the role of reasoning, reflection, and knowledge construction in grammar learning (Fredricks et al., 2004; Reeve & Tseng, 2011). Regarding cognitive engagement, Wang et al. (2016) opine that it is central to the learning process, as it promotes the application of learning strategies and self-regulation. SD profoundly influences cognitive engagement by pushing students to engage in higher-order thinking - analyzing, evaluating, and synthesizing information in real-time discussions. As Fredricks et al. (2004) argue, students who engage deeply with the material, using strategies such as self-regulation, are more likely to achieve a deep understanding and perform better on assessments. Regarding academic engagement, Wang et al. (2016) argue that students with strong academic engagement show greater effort and persistence, and that academic strategies lead to better performance.

The rise in social engagement ($M = 0.75, p = .004$) also confirms Chu et al.'s (2019) and Liu et al.'s (2019) findings that collaborative approaches foster peer learning and mutual support. Fredricks et al. (2004) see it as the extent to which students interact with others, including peers, teachers, and the school community. Lam et al. (2014) said social engagement involves

collaboration and student-teacher relationships; Their study demonstrates that social engagement leads to a sense of community and encourages students to work together to solve problems, thereby enhancing their learning experience.

What Are Students' Perceptions of SD in Grammar Lessons?

The interviews were conducted with three groups of students representing three levels of classroom participation: low (two students labelled L1 and L2), moderate (two students labelled M1 and M2), and high (two students labelled H1 and H2). Six components of student learning perceptions suggested by Haghghi et al. (2019): Usefulness, Autonomy, Engagement, Motivation, Satisfaction, and Anxiety, are presented below:

Usefulness

Despite the brief time spent on the approach, L1 and L2 contend that their attempts at thinking and their connections with other students were encouraged during a lesson. This way, they could “understand grammar clearer and memorise its rules better” (L1) and “become more confident about grammar structures” (L2). Additionally, they agreed that integrating SD into classroom instruction fostered their effortful participation in different ways. L1 recognised that problems used for classroom instruction illustrate typical grammar mistakes he would possibly encounter, so he felt like he had to know how to solve them. L2 disclosed that when she saw her friends discussing or even arguing seriously about problems in class, she felt a strong urge to join in. Concerning M1 and M2, they emphasised that this instructional approach promoted “learning by doing”, rather than adhering to fixed knowledge and rigid structures. They considered their learning process to involve problem-raising, rational thinking, and idea-exchange.

Regarding H1 and H2, both confirmed that learning by solving real problems helped them absorb new knowledge easily, retain it for a long time, and become aware of grammar mistakes. To clarify this point, H1 shared her thoughts, “Although learning through problem-solving took time and required efforts, I could understand new grammar structures clearly and retain them in my memory”. H2 stated that “a grammar lesson can be longer, following your instruction, but I could feel that I had mastered the knowledge”.

Autonomy

L1 and L2 expressed uncertainty about their self-learning independence in the class. This displayed the modest influence of SD on their autonomy. However, L1's response revealed the optimism that he could explore new knowledge independently when he had more time to familiarise himself with the approach. In contrast, M1 and M1 responded differently about the impact of SD on their self-learning confidence.

The learning approach led to my self-discovery of grammar by providing me with texts featuring well-structured sentences and raising common mistakes as topics for class debates. I based my approach on these sentences, my former knowledge, and my way of thinking to address these mistakes. This way, I did not have to overload my mind with numerous formulas; instead, I could understand and apply them. (M1)

M1's response showed that his efforts to address predetermined mistakes, as practical problems for learning instruction, helped him obtain knowledge about the form and function of the target language.

I could do it myself, but I could do it with my friends. When we discussed together, we shared small ideas. We synthesised these ideas together to form a new concept. [...] Honestly, this learning way [...] required us to manage our learning and reach our understanding. However, I like it because it can boost my concentration and learning outcomes. (M2)

Both H1 and H2 agreed that SD was effective in guiding their self-learning. They thought that the development of challenges during every lesson helped construct their knowledge and sustain motivation for further exploration. Interestingly, H2 disclosed that SD changed her perception of how grammar could be learned. She realised that she could discover grammar by making efforts to tackle instructional problems.

Apart from L2, the others expressed confidence in their self-learning or at least provided evidence that they could develop this ability. To be concise, L1 stated that prolonged exposure to SD could help him build his self-learning confidence. M2's response showed that she was in the early stage of autonomous learning development. The other students (M1, H1, and H2) agreed that the treatment supported their self-discovery and self-construction of grammar.

Engagement

L1 and L2 confirmed that they made considerable effort to think critically and paid more attention in class. L1 confessed that a pressing need for reflective reasoning propelled his learning.

I felt compelled to answer the question “why” to all the information I receive. [...] When my classmates’ ideas differed from mine, I sought reasons for these differences by asking myself or others around me. [...] However, I still tried to select information when I listened to them, instead of completely depending on their ideas. (L1)

L2 tended to be engaged more in hands-on learning. She acknowledged that active participation in group discussions and class debates made her thoughts more apparent.

“I interact with my friends a lot. Apart from asking my group members, I sometimes asked members in other groups. [...] Listening to other students in group discussions and during class debates made my thoughts clearer and more transparent.” (L2)

Both L1 and L2 found the class fun, energetic, and active. About M1 and M2, the two said that SD-based instruction captured their head-learning engagement. It immersed them in thinking by providing stimulating challenges that guided their self-exploration of grammar.

When a challenge was given to us, I thought about my first idea, discussed it with my friends and thought again. I continued this process until I reached my conclusion. In the debating phase, once one problem was solved, we were presented with further challenges. (M2)

Regarding H1 and H2, both enjoyed the process of tackling complex problems and the sense of accomplishment when they achieved understanding. This pushed them to seek further knowledge. In terms of hands-on learning, they were encouraged to interact actively with other students. They thought that it allowed them to check their ideas with others and “learn from them when they had better ideas” (H1). The two students were also engaged in their heart-learning; they felt enthusiastic because it was competitive and fun. Furthermore, they expressed their sense of belonging in class: “the most important thing was that we worked hard together, and we gained knowledge together” (H1).

Motivation

L1 and L2 shared a gradual shift in the learning incentives behind their participation in the class, from a sense of obligation to a sense of achievement. Initially, motivation occurred under the influence of social

factors (i.e., peers' enthusiastic work) and instructional factors (i.e., the need to self-explore knowledge).

I had no choice but to attend the lessons when I saw everyone around me working enthusiastically. Moreover, grammar knowledge was not provided to me directly at first. Hence, I had to seek it out myself by asking other students and listening to them. (L1)

Concerning M1 and M2, M1's eagerness to learn was driven by the challenges provided in the class, while M2 expressed her inspiration in mutual learning like this:

I listened to their ideas and focused on their explanations. [...] I felt happy to listen and learn from them when they had better ideas. When they agreed with me, I got motivated to share my ideas. When they disagreed with me, I remained motivated to discuss the issue with them, aiming to learn from their perspective. (M2)

Concerning H1 and H2, the two students emphasised that the challenges used in classroom instruction motivated them to explore every grammar structure, even its minor details.

Satisfaction

L1 and L2 both supported SD because it made the learning environment more favourable for them. However, they also expressed concern about the high mental exertion it required. L2 noted, "it pushed my brain to work so hard that I was likely exhausted after each lesson". As explained by L1, "the lessons were challenging and they went quickly, and I had to think a lot to follow them, so I got tired at the end". Regarding M1 and M2, the two students firmly advocated the application of SD in their future grammar lessons, since it would help them "grasp grammar knowledge better" (M1) and boost their "learning spirit" (M2).

Anxiety

L1 explained that accepting and sympathising with mistakes in SD-based instruction helped him overcome his worries. L2 overcame tension when participating in group discussions, which provided her opportunities to learn from others and receive their support. M1 explained that he had no sense of anxiety because he was encouraged to speak out her ideas, without worrying if they were incorrect, and received constructive feedback in the

class. M2 had no room for anxiety since she was completely engaged in the constant process of idea exchange. H1 and H2 reported a slight degree of nervousness during class debates, but they perceived this feeling positively. They all agreed that feedback was constructive.

The interview data reveal that students perceived SD as applicable, autonomy-supportive, engaging, motivating, satisfying, and anxiety-reducing - echoing the six components of student learning perceptions proposed by Haghghi et al. (2019). Regarding *usefulness*, students reported a more precise understanding, better retention, and increased confidence in applying grammar rules, which aligns with previous studies that found that SD fostered curiosity and students' feelings of comfort (Muslimah, 2022). Regarding *autonomy*, several students, especially M1, H1, and H2, reported increased confidence in their self-discovery of grammar, supporting Yengin and Karahoca's (2012) and Balbay and Dogan's (2023) views of the teacher as a facilitator rather than the sole authority. While some (e.g., L1) needed more time to adapt, progression toward independent learning was evident. In terms of *engagement*, student accounts of sustained mental effort, active discussion, and critical thinking confirm Mahoney et al.'s (2023) "head-hands-heart" model, showing how SD integrates intellectual challenge with emotional and social involvement. As regards *motivation*, the shift from obligation to intrinsic motivation - driven by challenge, collaboration, and debate - parallels findings from Liu et al. (2019) and Chu et al. (2019) on interactive, problem-based activities. About *satisfaction*, high satisfaction was expressed toward the lesson flow, debate structure, and interactive environment, consistent with Egbert et al. (2021). However, some noted mental fatigue, highlighting the need to manage cognitive load in future applications. With respect to *anxiety*, most students experienced reduced anxiety due to peer support and the normalisation of mistakes, supporting Gayle et al.'s (2013) emphasis on safe dialogue spaces. Minor nervousness in debates was framed as positive tension that encouraged learning, a nuance less explored in prior SD research. In sum, the perceptions data complement the quantitative results by showing how and why SD enhanced engagement. They confirm prior claims about SD's benefits (Muslimah, 2022) while adding new evidence on its multi-dimensional effects in EFL grammar instruction.

Limitations

The study has two significant limitations: a small sample size and a short experimental duration. SD was conducted in a small class of 13 students, which may limit the generalisability of the findings to larger or more diverse populations. Additionally, the ability to observe and examine the lasting effects of the treatment was restricted, as the entire process consisted

of two lessons. These weaknesses were anticipated at the start of the study, so the data collection matrix, with its various instruments, enhanced the depth and comprehensiveness of the findings. Furthermore, self-reported data may be biased due to misinterpretation of questions, social desirability bias, or self-evaluation errors. Finally, to enhance results, future studies may want to adopt a holistic, longitudinal approach to understand better the impact of SD on student engagement across dimensions.

Implications

The study has the following implications:

1. **Malleability of Engagement:** Experiments across the two cycles reveal a malleable nature of engagement that determines the extent to which students engage in their grammar class. Empirical findings from the AR across the entire action process suggest that well-considered facilitators, as listed by Egbert et al. (2021), leverage SD's potency for student engagement.

2. **Complex Construction of Engagement:** The study unveils the complex construction of engagement. In this study, the inclusion of three extended dimensions (e.g., agentic, academic, and social) helped the researcher address confusion in classifying and explaining memorable incidents recorded from students' behaviors.

3. **Designing Focal Points in Grammar Lessons:** Two key factors in the action process determine whether SD can be applied in grammar lessons. First, focal points in the grammar focus phase needed to be well-designed to immerse students in the exploration of new knowledge. To this end, instructional challenges should be varied across diverse contexts and structures to stimulate students' interest continually. Besides, the challenging extent should be developed in line with the learning flow to sustain their engagement.

4. **Support for Inductive Learning:** Students who are not familiar with inductive learning and rational thinking may encounter pressures and difficulties following grammar lessons. Thus, intensive instruction and teacher support are of paramount importance to encourage their learning efforts.

5. **EFL Settings:** SD is a student-centred approach that marks a shift toward classrooms where learners are encouraged to construct their own understanding of language rules and foster deeper engagement with the material. It can also be used to teach EFL learners in language skills classes: listening, writing, and reading classes, promoting critical thinking and active student participation. SD aligns with task-based and communicative language teaching, all of which prioritise student interaction, autonomy, and problem-solving.

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Appendix

Results of Individual Engagement Items

Items	Before Use of SD			After Use of SD	
	N	M	SD	M	SD
Affective engagement	13	2.27	0.94	3.05	0.79
1. I feel grammar is interesting to learn.	13	2.31	0.85	2.85	0.69
2. I like the content of grammar lessons.	13	2.69	1.11	3.54	0.52
3. I enjoy learning new grammar knowledge in my class.	13	2.46	0.88	3.15	0.55
4. I think classroom activities are interesting.	13	2.08	0.95	2.85	0.99
5. I am happy to be in my class.	13	2.15	0.99	3.46	0.52
6. I look forward to grammar sessions.	13	1.92	0.76	2.46	0.88
Behavioral engagement	13	2.48	0.99	3.19	0.63
7. I try hard to do well in my grammar class.	13	2.92	0.76	3.00	0.58
8. I genuinely work instead of just acting in my class.	13	2.54	1.27	3.54	0.66
9. I participate in all classroom activities.	13	2.38	1.04	3.23	0.44
10. I actively participate in group discussions and class discussions.	13	2.54	1.05	3.15	0.55
11. I often share my opinions with my teacher and my friends.	13	2.08	0.86	3.08	0.76
12. I try to complete learning tasks on time.	13	2.85	0.99	3.15	0.69
13. I listen to my teacher and my friends carefully.	13	2.08	0.76	3.15	0.69
Cognitive engagement	13	2.27	0.91	2.78	0.61
14. I go back over knowledge related to the things I do not understand.	13	2.62	0.87	2.62	0.65
15. I try to know where I went wrong when I make grammar mistakes.	13	2.77	0.73	2.85	0.55
16. I am motivated to think deeply when I take quizzes in my class.	13	2.00	0.82	3.23	0.60
17. I connect new knowledge with previous one to understand better.	13	2.31	0.95	2.85	0.80
18. I check my books or other materials when I am unsure about things.	13	2.54	0.97	2.77	0.44

19. I judge the quality of my performance in class activities.	13	1.85	0.80	2.46	0.52
20. I try to figure out the hard parts on my own before asking for help.	13	1.85	0.90	2.69	0.48
Agentic engagement	13	2.08	0.87	3.25	0.61
21. In my class, I ask questions about things I am unclear.	13	2.23	0.73	3.38	0.51
22. I tell my teacher what I like and what I do not like in a lesson.	13	1.92	0.86	3.15	0.55
23. I let my teacher know learning activities which I am interested in.	13	2.23	1.01	3.23	0.60
24. In my class, I express my references and opinions.	13	2.31	0.75	3.38	0.65
25. I offer suggestions about how to make the class better.	13	1.69	0.95	3.08	0.76
21. In my class, I ask questions about things I am unclear.	13	2.23	0.73	3.38	0.51
22. I tell my teacher what I like and what I do not like in a lesson.	13	1.92	0.86	3.15	0.55
23. I let my teacher know learning activities which I am interested in.	13	2.23	1.01	3.23	0.60
24. In my class, I express my references and opinions.	13	2.31	0.75	3.38	0.65
25. I offer suggestions about how to make the class better.	13	1.69	0.95	3.08	0.76
Academic engagement	13	2.67	1.04	3.37	0.57
26. I feel motivated to work hard in my class.	13	2.15	0.80	3.23	0.44
27. I try to do my best in class activities.	13	2.15	0.80	3.31	0.48
28. I learn more than the content of my textbooks.	13	2.62	0.96	3.54	0.66
29. I feel that my teacher cares about my thoughts and attitudes.	13	3.00	1.15	3.31	0.75
30. I appreciate my teacher's feedback on my performance.	13	2.69	1.11	3.38	0.51
31. I like my teacher's interaction style in giving instruction.	13	3.15	0.99	3.54	0.66
32. I believe my teacher's instruction can help me reach my goals.	13	2.92	1.19	3.31	0.48
Social engagement	13	2.42	0.90	3.16	0.78

33. Aside from my teacher, I also learn from other students' ideas.	13	2.23	0.83	3.00	0.91
34. I think about other students' ideas carefully to understand them well.	13	2.46	0.78	2.92	0.95
35. I try to work with other students to learn better.	13	2.31	0.95	3.23	0.93
36. I try to help other students who are struggling with grammar.	13	1.85	0.69	2.92	0.64
37. I respect other students' opinions.	13	2.85	0.90	3.31	0.63
38. When working with other students, I am willing to share my ideas.	13	2.46	0.88	3.31	0.75
39. I like working and discussing with my classmates.	13	2.77	1.01	3.46	0.52
