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## All hands on deck: The effect of cooperative language learning on improving Iranian high school students' critical thinking, speaking skill, and autonomy

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Original Research Article

Date of Submission: 01 December 2023

Date of Acceptance: 23 January 2024

### Abstract

Cooperative language learning (CLL) describes instructional approaches in which learners work together in small, organized groups to accomplish common academic objectives., fostering active participation and deeper understanding. Given its emergence as a highly influential and productive domain of educational theory, research, and practice, this paper examines the concept as a dynamic and pedagogically effective approach within contemporary educational contexts. The present contribution is a quasi-experimental study with two-group pre-test and post-test design carried out to unearth the effectiveness of improving the students' critical thinking, autonomy, and language achievement in English class. A pre-test of critical thinking, autonomy, and language achievement consisting of 47 items was administered first. Completing the questionnaires required approximately 30 minutes. During the intervention phase, learners in both the experimental and control groups worked in pairs or small groups of three, and the cooperative learning technique and the traditional instructional method were implemented across ten sessions. The results of ANCOVA,  $F(133,36) = 25.609$ ,  $p = 0.000$ , indicated that cooperative learning strategies enhance learners' speaking competence, confidence, and engagement, making them more effective and active participants in the educational process. The transition from teacher-centered to learner-centered instruction underscores the importance of cooperative language learning (CLL) for both classroom teachers and teacher educators, and the findings suggest that teachers and teacher-trainers can apply these strategies to design more interactive classrooms, foster learner autonomy, and integrate critical thinking into everyday language instruction.

**Keywords:** cooperative language learning (CLL), English language teaching, speaking skills, critical thinking, autonomy

### 1. Introduction

Cooperative learning has emerged as a highly influential and productive domain within educational theory, research, and practice. It involves learners working collaboratively in small

DOI: <https://doi.org/10.22034/jespp.2024.558869.1030>

groups, providing mutual support as they strive to accomplish shared instructional objectives during the teaching–learning process. Cooperative language learning constitutes a suite of teaching and learning strategies that require students to engage with one another in structured group settings to accomplish agreed-upon academic targets. These practices emphasize positive interdependence and reciprocal support, thereby facilitating both communicative practice and collective problem solving. and is explicit instructions chronological event technique which is selected because it will make students more active and provide with a high learning experience (Khair, & Misnawati, 2022). A range of cooperative learning structures has been identified in the literature. Base groups, for example, are long-term groups with consistent membership that provide ongoing academic and social support. Formal cooperative learning groups, by contrast, are temporary groupings that may operate for a few minutes or extend across several class sessions to complete a specific task or assignment; membership is typically assigned at random and rotated regularly (Macpherson, 2007). When designing instruction within a cooperative learning framework, five core principles must be taken into account: positive interdependence, individual accountability, sustained face-to-face interaction, explicit training and use of social and collaborative skills, and systematic group processing to maximize both linguistic practice and group functioning (Johnson et al., 1991; Kagan, 1994).

Cooperative Language learning has recently concentrated in the vision of more educators and teachers due to the significant roles in creating an interactive learning environment. This strategy involves two or more learners jointly engaging in the learning process within a cooperative language learning framework. Within such groups, learners interact and negotiate meaning, collaborate to resolve learning-related challenges, draw on both cognitive and metacognitive resources during their exchanges, and assume shared responsibility for their own learning (Chatterjee & Correia, 2020).

In recent years, English language pedagogy has undergone a notable shift from teacher-centered instruction to learner-centered approaches. This transition marks a new phase in the teaching of spoken English, one that provides learners with greater opportunities to express themselves orally. Speaking, as a productive skill, plays a central role when it comes to facilitating successfully effective communication (Leong & Ahmadi, 2017). Contemporary English language teaching therefore emphasizes the creation of meaningful output as a means of promoting communicative effectiveness (Kadhim & Mohsein, 2024). Across domains such as education, research, science, commerce, and technology, proficiency in English and strong communicative abilities offer learners substantial advantages (Carreira & Kagan, 2011).

Traditionally, learners often relied on memorizing extensive vocabulary lists without necessarily developing fluent oral skills. In contrast, an individual who speaks with accuracy and effectiveness can communicate appropriately and is more likely to project a positive impression, enabling confident and successful interaction with others (Gorjian & Asadinezhad, 2015).

In general, it is widely acknowledged that learners’ speaking abilities can be enhanced through a range of instructional methods, the use of appropriate communicative tasks, and the adoption of learner-centered pedagogical practices (Bashir et al., 2011). Although extensive research highlights the limitations of teacher-centered instruction—particularly its tendency to position learners as passive recipients of information and thereby hinder the development of communicative competence (Gömleksiz, 2007; Ning, 2011)—learner-centered approaches offer students greater opportunities to articulate their ideas and engage actively in spoken language use. Nevertheless, despite teachers’

awareness of the advantages associated with student-centered pedagogy, English language classrooms continue to rely predominantly on teacher-centered methods (Murray & Christison, 2019).

Because learners have limited exposure to English in their everyday environments and often show low motivation to speak, opportunities for meaningful communication and interaction in the classroom are restricted. Consequently, developing oral competence frequently lags behind progress in other language domains; students commonly struggle to improve speaking while also working on listening, reading, and writing. Effective communicative competence, however, depends on the coordinated integration of these skills, since fluent and accurate spoken interaction requires receptive processing, lexical and grammatical knowledge, and the ability to plan and monitor output across modalities. To move beyond traditional approaches to speaking instruction, teachers need to adopt learner-centered methods and strategies, among which the Cooperative Language Learning approach has been identified as particularly effective (Hall Haley & Ferro, 2011). This approach supports the development of oral proficiency and fosters greater social interaction among learners (Ning, 2011).

The influence of cooperative learning on learners' autonomy, critical thinking and language achievement provides a valid justification for educators to cultivate a deeper understanding of it. In this study, learner autonomy is conceptualized as a pedagogical dynamic that fosters learner autonomy by requiring students to take charge of the entire learning cycle—setting objectives, selecting and enacting strategies, monitoring performance, and evaluating results—to promote self-regulated and reflective learning. From the outset, these processes are carried out as much as possible in the target language, allowing it to function as a medium for both individual and collaborative agency (Little, 2022). Such autonomy supports learners' progress and contributes to their ability to reproduce and apply language forms that have been taught and partially mastered (George, 2017).

Recent research has provided substantial evidence for the effectiveness of Cooperative Language Learning (CLL) in Iranian EFL high schools, demonstrating its positive influence on learners' motivation through cultural intelligence (Bećirović, 2023), on teachers' perceptions of speaking instruction (Tamimy, 2023), on the development of critical thinking through technology-mediated learning and (Liu, 2024). Building on these results, this study examines how cooperative language learning (CLL) influences learners' autonomy, critical thinking, and language achievement in relation to their English-speaking development. It also seeks to measure the extent to which the notion of cooperative learning can serve as an effective pedagogical strategy for enhancing overall learner performance.

## 2. Literature Review

### 2.1. Theoretical Background

Cooperative Language learning is a community action in which learning is carried out through the trade of data. Inside this system, group individuals are responsible for their possession of information building and encouraging the learning of other group individuals (Kagan, 1994). Cooperative Language learning in student-centered instructing strategies has been seen as a compelling implies of expanding learner maintenance, building communication and social abilities, and creating students' basic considering capacities (Johnson et al., 1994; Kagan, 1994).

What distinguishes cooperative learning from many other instructional approaches is its grounding in social interdependence theory and the extensive body of research associated with it.

Cooperative learning comprises several distinct formats. Formal cooperative learning involves students collaborating over an extended period—from a single class session to several weeks—to pursue shared learning objectives and complete designated tasks or assignments; this describes informal cooperative learning refers to short-term, ad hoc group work in which learners cooperate for only a couple of minutes or up to one class period to achieve a common objective. Cooperative base groups follow long-term objectives, forming heterogeneous groups with stable membership designed to provide continuous academic and emotional support as students' progress through their studies. Another structure, constructive controversy, occurs when group members hold differing ideas, opinions, or conclusions and work collaboratively to reconcile these differences and reach a mutually acceptable resolution.

Research on cooperative learning and second language acquisition can be examined through three key variables (input, output, and context) which play a central role in facilitating language development (Krashen, 1985; Kagan, 1995).

A growing body of empirical research shows that cooperative learning has a substantial positive impact on most of the variables considered fundamental to successful language acquisition (Kagan, 1995). From an input-based perspective, acquisition is facilitated when learners are exposed to language that is comprehensible (Krashen, 1985), aligned with their developmental level, sufficiently repetitive, and linguistically accurate—conditions that cooperative learning environments are well positioned to provide (Kagan, 1995). As Kagan (1995) notes, small-group interaction provides learners with substantially greater access to comprehensible input, as speakers can adapt their language to match the listener's proficiency level and negotiate meaning—an opportunity far less available in whole-class instruction.

In general, five key elements characterize cooperative learning and are essential for ensuring its successful implementation: (1) positive interdependence, (2) individual accountability, (3) quality of group processing, (4) teaching of cooperative skills, and (5) teaching of social skills. Each of these five elements will be examined in detail in the subsequent section

## **2.2. Empirical Studies**

Research conducted in a range of educational contexts has demonstrated the effectiveness of collaborative learning, with cooperative learning identified as one of the best approaches for increasing learner participation. In a recently published study, Appiah-Twumasi et al. (2020) compared different applications of cooperative learning and found that students who received instruction that combined cooperative learning with the use of an instructional manual led to significantly better achievement on mechanics-related concepts than cooperative learning by itself. Based on these findings, the authors recommended that teachers integrate instructional manuals into cooperative learning activities to further enhance secondary school students' academic achievement.

Lie (2002), in a study carried out in China found that cooperative learning plays a significant role in fostering students' higher-order thinking skills. Similarly, Altun (2015) noted that cooperative learning supports teachers in implementing more effective instructional practices. Kahiigi's (2013) findings further emphasized the importance of promoting cooperative learning in classrooms, as it enhances students' comprehension of instructional content. In the same vein, Ngussa (2017) argued that encouraging learner participation is essential for improving language competence—particularly in

Literature in English—because it increases interaction both among learners and when learners interact with their instructors.

Paschal et al. (2020) found that cooperative learning tended to often be inadequately supervised in school settings, with teachers teaming up but failing to monitor how effectively those groups functioned. Similarly, Iddy and Chiwanga (2017) reported that while some teachers actively promoted cooperative learning and structured classroom activities around group work, others did not encourage such practices. Their study revealed limited teacher–learner interaction in these classrooms, where teachers tended to rely on a small number of more proficient students to participate actively. As a result, weaker learners were frequently overlooked and given few opportunities to engage meaningfully in the actual learning process.

Whitener (2014), in a study carried out in the United States on the use of cooperative learning principles in school classes, found such techniques offer music instructors a theory-driven and research-supported instructional framework. When implemented effectively, cooperative learning was shown to help students achieve more, develop stronger social skills, enjoy school to a greater extent, and build more positive relationships with peers. Similarly, Sigau (2007) reported that cooperative learning enhances students' performance in literature. The approach fosters a spirit of collaboration in the classroom; for instance, when learners work in group pods to debate themes and subthemes from a text, the instructor may introduce the core ideas, but the deeper exploration is carried out by students through small-group discussion. This collaborative engagement ultimately contributes to improved achievement in literature. Osalusi (2012) examined differences between students taught through cooperative learning in the experimental group outperformed those receiving traditional instruction in the control group, with results indicating a clear advantage for the experimental condition, which demonstrated higher levels of critical thinking and decision-making abilities. Learners exposed to cooperative learning achieved notably higher mean scores than their counterparts taught through other instructional approaches. Based on these findings, the study recommended that social studies teachers adopt cooperative learning strategies to promote the development of critical thinking and decision-making skills. Such practices can enhance students' overall academic performance—including in literature—by enabling them to construct knowledge collaboratively through guided group discussions.

Vitalice (2018) investigated how cooperative learning influences students' achievement and attitudes toward oral literature and concluded that such approaches provide an important foundation for enhancing learners' performance and their interest in studying oral literary genres. The study further emphasized that, when implemented effectively, cooperative learning offers more fertile grounds for learners to develop group interaction skills and to collaborate with peers in analyzing, synthesizing, and discussing a range of academic tasks.

Mkomele's (2015) investigation of cooperative learning approaches in secondary schools found that these methods show considerable potential for fostering cognitive development, aligning closely with constructivist perspectives that position learners at the heart of the educational process. Similarly, Erbil and Kocabas (2018) contend that cooperative learning constitutes a democratic mode of instruction characterized by the sharing of ideas, collaborative engagement, interactive participation, collective brainstorming, the cultivation of a classroom community, and extended,

purposeful discussion. These features position learners as co-constructors of knowledge and promote deeper cognitive and social involvement in the learning process.

Ehsan et al. (2019) investigated the influence of cooperative learning on students' speaking ability and motivation to learn English in China. Baseline assessments indicated that participants performed at generally low to moderate levels in English literature. Following the intervention, however, learners in the experimental group—who were taught through cooperative learning—achieved significantly greater gains than those in the control group exposed to non-cooperative instructional methods. These findings reveal that cooperative learning plays a meaningful role in fostering English language acquisition within literature classes. In addition, qualitative evidence revealed that cooperative learning contributed to students' social development and increased their interest in studying English literature.

Collectively, these studies demonstrate that Cooperative Language Learning (CLL) enhances EFL learning outcomes by promoting motivation, cultural intelligence, and positive interdependence among secondary students (Bećirović, 2023). In the Iranian context, teachers have developed implementation frameworks that foreground collaborative speaking practices, even when faced with contextual constraints (Tamimy, 2023). Technology-supported CLL models have also been shown to strengthen learners' critical thinking and communication skills in EFL settings (Liu et al., 2024), while collaborative techniques have been found to foster learner autonomy and improve speaking proficiency in Iranian high schools. Taken together, this body of research indicates that CLL reliably enhances motivation, communicative competence, autonomy, and critical thinking, with its effectiveness shaped by cultural awareness, contextual conditions, and technological integration.

### 3. Research Questions

To address the existing gap in understanding how Cooperative Language Learning influences learners' communicative achievement and speaking performance—particularly through the mediating roles of autonomy and critical thinking—the present study seeks to systematically examine and respond to the following research questions that guided the study:

1. Does Cooperative Language learning have any effect on improving learners' speaking skill?
2. Does Cooperative Language learning have any effect on critical thinking of students?
3. Does Cooperative Language learning have any effect on autonomy of students?

### 4. Method

#### 4.1. Design of the Study

To address the research questions, the study employed a quasi-experimental two-group pre-test–post-test design to determine whether the cooperative learning intervention effectively enhanced students' critical thinking, autonomy, and language achievement in English classes. Due to limited access to multiple classrooms, random sampling was not feasible; therefore, participants were selected from the students already enrolled in the researchers' classes. Although convenience sampling reflected practical constraints, the design still permitted comparisons between the experimental and control groups which were both meaningful and methodologically sound. The use of standardized pre- and post-tests increased the reliability of the measurements, and implementing the intervention in real

classroom environments strengthened ecological validity, ensuring that the results were both trustworthy and relevant to actual teaching practice.

#### 4.2. Participants

The sample comprised 40 Iranian female high school students enrolled in English courses at a public secondary school. Participants were assigned in equal numbers to the experimental group ( $n = 20$ ) and the control group ( $n = 20$ ). Their ages ranged from 16 to 18 years, aligning with the conventional age range for upper-secondary education in Iran. All participants had comparable educational backgrounds and a minimum of three years of prior English study, which helped ensure a relatively homogeneous proficiency level at the beginning of the study. The study's intervention extended across 10 weeks, during which the experimental group received instruction based on cooperative learning principles, while the control group remained engaged in traditional teacher-centered pedagogy. All participants took part voluntarily, and informed consent was obtained from both the students and the school administration, ensuring full compliance with ethical standards for educational research.

#### 4.3. Instrumentation

Three instruments were employed in the study. The first was a 14-item critical thinking questionnaire, adapted primarily from Virtanen, et al. (2019) and structured on a three-point Likert scale to measure three dimensions: understanding and analyzing ideas and arguments, evaluating ideas and arguments, and solving problems and making decisions. Given that the instrument was developed specifically for this investigation, its content validity was assessed by five English-language experts, and its reliability was subsequently confirmed.

The number of items was deemed sufficient to capture the construct because each dimension was represented by multiple items, ensuring coverage of the key aspects of critical thinking while maintaining manageability for high school participants. To establish content validity, five English language experts reviewed the questionnaire, focusing on item clarity, relevance, and alignment with the intended constructs. They provided ratings and qualitative feedback, which led to minor revisions in wording to improve comprehensibility. Reliability of the instrument was evaluated through the use of Cronbach's alpha, which produced a coefficient of 0.76, indicating an acceptable level of internal consistency for the scale. Together, these validation procedures confirmed that the instrument was both reliable and appropriate for assessing critical thinking within the context of the study.

To assess learners' autonomy, the study employed the questionnaire developed by Zhang (2018), which consists of 21 items revised and adapted according to the learning strategy classifications proposed by Oxford (1990). The instrument has been shown to possess strong content validity and high reliability. The questionnaire was administered to the high school participants individually, with each student allotted forty minutes to complete it.

The third instrument was a language achievement questionnaire, designed in the same format as the previous two instruments and consisting of 12 items. It was primarily adapted from the questionnaire developed by Jones (2001). Although the initial version contained 12 items, feedback from experts and findings from a pilot study with 40 participants resulted in substantial revisions to both the number and structure of the items. The final version used in this study retained 12 refined

items. The instrument underwent validation procedures, and its reliability was confirmed through an acceptable Cronbach's alpha coefficient.

#### **4.4. Data Collection Procedure**

The study began with the administration of a pre-test measuring critical thinking, autonomy, and language achievement, comprising a total of 47 items. Prior to implementation, all questionnaires were piloted, yielding reliability coefficients of 0.76 for critical thinking, 0.95 for autonomy, and 0.92 for language achievement, indicating strong internal consistency across the instruments. Students required approximately 30 minutes to complete the pre-test. Following this stage, the instructional intervention commenced. Participants in both the experimental and control groups were organized into pairs or triads. Subsequently, the experimental group received instruction grounded in cooperative learning principles, whereas the control group continued with standard teacher-centered pedagogical practice. over the course of 10 sessions.

All procedures adhered to established ethical research standards. Prior to data collection, participants were informed about the objectives of the study, assured of the confidentiality of their responses, and reminded of their right to discontinue participation at any time. They then completed an informed consent form. The study involved 40 students, who were equally distributed between the experimental group ( $n = 20$ ) and the control group ( $n = 20$ ). Within each group, students were further organized into pairs or triads to facilitate interaction. The experimental group received instruction through cooperative learning techniques, including structured peer discussions, group problem-solving, and collaborative speaking tasks, while the control group continued with traditional teacher-centered instruction. The intervention lasted for 10 sessions over 10 weeks, with each session lasting about 45 minutes and following a consistent structure: warm-up activity, cooperative task or traditional exercise, group reflection, and teacher feedback. This design ensured that both groups received equal instructional time, while the experimental group experienced systematic exposure to cooperative learning strategies.

#### **4.5. Statistical Analysis**

To address the research questions and test the proposed hypotheses, data analysis was conducted using SPSS (Version 22). Reliability of the measurement instruments was evaluated via Cronbach's alpha. Descriptive statistics, including means and standard deviations for both pre-test and post-test scores, were presented. The Kolmogorov–Smirnov test was applied to assess whether the data conform to the assumption of normality. Provided that this assumption was met, an Analysis of Covariance (ANCOVA) was employed to examine the effect of the independent variable on the dependent variables. In cases where normality was violated, procedures such as removing outliers or applying data transformations was used to achieve acceptable distributional properties, as no non-parametric equivalent exists for ANCOVA. ANCOVA was also used to examine whether significant differences emerged between the experimental and control groups in terms of critical thinking, autonomy, and language achievement.

### **5. Results**

This section details the study's results, starting with the descriptive statistics for the pre-test and post-test scores obtained from the autonomy, critical thinking, and language achievement

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questionnaires. The descriptive results include the mean, minimum and maximum scores, and standard deviations for each measure.

As presented in Table 1, students' autonomy demonstrated notable growth, with the mean score increasing from 85.24 prior to the intervention to 97.96 afterward. Although this 12-point rise suggests a potential positive effect of the treatment, definitive conclusions cannot be drawn without the support of inferential statistical analyses. The standard deviation nearly doubled from pre-test to post-test, indicating greater variability in students' autonomy scores following the intervention. Additionally, the maximum score increased from 100 to 130, while the minimum score remained relatively stable.

**Table 1**

*Descriptive Statistics of Pre-tests and Post-tests of Autonomy*

Tests	Pre-test	Values	Post-test	Values
Autonomy	Mean	85.24	Mean	97.96
	Min	57.33	Min	66.66
	Max	100	Max	130.66
	SD	10.06	SD	20.33

In the case of critical thinking, as outlined in Table 2, the results reveal a distinct pattern. The mean score increased by 11 points from the pre-test to the post-test, reflecting a measurable enhancement in students' critical thinking abilities. It is important to note, however, that the number of items—and therefore the potential total score—was higher for this questionnaire, which may partially account for the magnitude of the change. The minimum score rose substantially from 20 to 34, and the maximum score increased by 10 points. In contrast to the autonomy results, the standard deviation for critical thinking decreased, suggesting that students' scores became more homogeneous following the intervention.

**Table 2**

*Descriptive Statistics of Pre-tests and Post-tests of Critical Thinking*

Tests	Pre-test	Values	Post-test	Values
Critical thinking	Mean	49.73	Mean	61.82
	Min	20	Min	34.66
	Max	77.33	Max	78.66
	SD	13.90	SD	10.70

Table 3 presents the changes in students' language achievement scores. Of the three measures, this test shows the smallest overall change. The mean score witnessed an upswing by only 6 points from pre-test to post-test. The minimum score rose by 10 points, indicating some improvement among lower-performing students. However, unlike the other measures, the maximum score dropped from pre-test to post-test. This reduction in the upper range of scores contributed directly to the observed decrease in the standard deviation.

**Table 3***Descriptive Statistics of Pre-tests and Post-tests of Language Achievement*

Pre-test		Values	Post-test		Values
Language Achievement	Mean	53.56	Mean	59.16	
	Min	28	Min	38.66	
	Max	98.66	Max	77.33	
	SD	12.90	SD	10.81	

The research question addressed whether cooperative learning exerted a significant influence on students' autonomy relative to traditional instruction. The one-way ANCOVA results presented in Table 4 indicate that cooperative learning led to a significant enhancement in the autonomy of students in the experimental group when compared with their counterparts in the control group. In other words, after controlling for pre-test scores, a statistically significant difference emerged between the two groups, demonstrating the positive impact of the cooperative learning intervention on learners' autonomy,  $F(133, 36) = 128.84, p = 0.000$ .

**Table 4***ANCOVA Results for Comparing the Students' Autonomy in Control and Experimental Groups*

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7145.54	2.6	3572.77	69.28	.000	1.05
Intercept	3850.66	1.33	3850.66	74.69	.000	0.9
Class. Eng. Pretest	175.95	1.33	175.95	3.412	.161	.116
Control. Experimental. Groups	6643.76	1.33	6643.76	128.84	.000	1.042
Error	1856.4	36	91.674			
Total	224896.00	40				
Corrected Total	9001.94	38.66				

The second research question investigated the extent to which cooperative learning affected students' critical thinking. As shown in Table 5, the ANCOVA analysis revealed a statistically significant difference between the experimental and control groups after accounting for pre-test performance, indicating that cooperative learning contributed meaningfully to improvements in critical thinking,  $F(133, 36) = 25.6, p = 0.000$ . This finding indicates that the cooperative learning intervention brought about a substantial positive impact on the critical thinking abilities of students in the experimental group.

**Table 5***ANCOVA Results for Comparing Students' Critical thinking in Control and Experimental*

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1096.4	2.66	548.021	14.10	.000	.585
Intercept	5699.812	1.33	5699.812	146.716	.000	1.070
Self. Esteem. Pre	.530	1.33	.530	.013	1.22	.000
Control. Experimental. Groups	994.666	1.33	994.905	25.6	.000	.554
Error	1398.58	36	51.798			
Total	88489.33	40				
Corrected Total	2494.622	38.66				

The third research question investigated the extent to which cooperative learning influenced students' language achievement. As tabulated in Table 6, the findings reveal that cooperative learning led to a significant increase in the language achievement scores of the experimental group. After adjusting for pre-test scores, a statistically significant difference was found between the experimental and control groups, demonstrating that the cooperative learning intervention had a positive and substantive effect on students' language achievement,  $F(133,36) = 25.609, p = 0.000$ .

**Table 6***ANCOVA Results for Comparing Students' Language Achievements in Control and Experimental*

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1096.041	2.66	584.021	14.106	.000	.585
Intercept	39898.684	1.33	5699.812	146.716	.000	1.070
Self. Esteem. Pre	.530	1.33	.530	.013	1.226	.000
Control. Experimental. Groups	994.905	1.33	994.905	25.609	.000	.554
Error	1398.58	36	51.798			
Total	66367.0	40				
Corrected Total	2494.622	36				

## 6. Discussion

The first major finding showed that cooperative learning significantly enhanced students' autonomy. Although no previous empirical studies have specifically investigated the relationship between cooperative learning and autonomy, this outcome is consistent with theoretical perspectives suggesting that collaborative learning structures foster greater learner responsibility, self-directed behavior, and decision-making. Cooperative tasks require students to negotiate roles, manage their learning processes, and contribute meaningfully to group outcomes—all of which are central components of autonomy. Several scholars have reported that cooperative learning can reduce learners' stress and anxiety levels (Casado & Dereshiwsy, 2001; Dörnyei, 1997; Frantzen & Magnan, 2005; Oxford, 2016; Young, 1999). When students experience lower levels of stress and anxiety, they tend to attend classes more willingly and participate more actively in classroom discussions. This aligns with previous research suggesting that cooperative learning can transform a tiring and demotivating classroom atmosphere into a more engaging and supportive learning environment

(Bishop & Verleger, 2013; Tucker, 2012), and can foster higher levels of learner engagement (Anderson & Krathwohl, 2001). Such outcomes are possible because cooperative learning facilitates students' understanding and application of various learning strategies (Lage et al., 2000).

Moreover, cooperative structures encourage learners to shoulder greater responsibility for their own learning so as to develop independence—an essential component of autonomy that is closely tied to active class participation (Zhang, 2018). Additionally, both students and instructors often prefer group-based tasks over traditional, individualistic approaches (Zainudin & Awal, 2012). Consequently, cooperative learning promotes higher levels of attendance, participation, and engagement, ultimately contributing to improvements in students' skills and academic performance.

The study further demonstrated that the cooperative learning technique enhanced students' autonomy, critical thinking, and language achievement. These findings are consistent with previous research (Fahami & Ezzati, cited in Heydari, Zarei, & Zeinalipour, 2013; Ghaith, 2003; Zainalipour, Zarei, & Heydari, 2013) Zainalipour et al., 2013 (no ending reference???) , which similarly reported positive outcomes associated with cooperative learning. One explanation for this improvement is that engaging in cooperative tasks enables students to realize that they can successfully solve problems that may have seemed unmanageable when working alone. Completing a task for the first time is often the most challenging stage; once learners accomplish it—either individually or collaboratively—they gain the confidence to perform it more effectively in subsequent attempts. A second contributing factor is the motivational impact of cooperative learning. Prior studies have shown that cooperative structures enhance students' interest and motivation (Liao, 2006; Sellers, 2005). Working in groups not only strengthens autonomy, critical thinking, and language achievement but also fosters greater enthusiasm for learning. A third explanation is that cooperative learning provides opportunities for peer feedback, which helps learners identify their strengths and weaknesses and refine their performance. As students receive constructive input from their peers, their confidence grows, and they develop a stronger belief in their own abilities. These results also align with the findings of Yaryary (2008), who reported that cooperative learning significantly improved students' autonomy, critical thinking, and language achievement.

The study's findings indicated that strengthening learners' cooperative learning skills positively influenced their performance in cooperative classroom settings, suggesting that skill development in this area plays a key role in facilitating more effective collaboration. This, in turn, supported their academic success and language achievement by enhancing their L2 knowledge, skills, and performance across various communicative situations—an outcome consistent with previous research (Bertucci et al., 2016; Perez-Gonzalez et al., 2020; Torrego et al., 2018). Furthermore, participation in cooperative learning classes has been shown to increase learners' motivation (Erdem, 2009; Foley & O'Donnell, 2002), leadership abilities (Martínez Lirola, 2016), and productive language skills (Martínez Lirola, 2016; Wang et al., 2010), as well as their creativity (Lobato-Fraile, 1997) and critical thinking and reasoning (Martínez Lirola, 2016).

Cooperative learning additionally contributes to cultivating a more supportive classroom climate, one in which students feel encouraged, valued, and engaged in collaborative processes by promoting the exchange of ideas, communication, and productive interaction among learners (Barkley et al., 2005; Vega et al., 2013), while simultaneously strengthening social relationships (Bertucci et al., 2016; Tolmie et al., 2010). Martínez Lirola (2016) further argued that cooperative learning enhances

learners' competencies in ways that prepare them in a more realistic way for real-world skills and tasks.

Despite these findings and the efficacy of CL on different learners' skills and competence, Slavin (2015) truly suggested that such studies need to not only address the relational and cause/effect dimensions, but also, they should highlight the way they can improve educational practices through the introduction of more practical and learner-centered approaches. Therefore, they can gain significant insights from different academic, social, cognitive, and behavioral theories and make practical suggestions to be applied in classroom to better inform the different stakeholders in EFL classrooms.

Moreover, there is an open and extended line of debate to pay more effort on the notion of devoting more time and duration to CL practices for enhancing learners' academic achievement in L2 classrooms. For instance, Fernandez-Rio et al. (2017) contended that despite the fact that CL practices may be cognitively and affectively challenging for both teachers and learners, they should be inherent parts of educational classrooms to improve academic success of the learners, since they can motivate learners both intrinsically and extrinsically. As Perez-Gonzalez et al. (2020) asserted, in order to confront learners with educational and vocational success, the practices of CL should be applied within the classroom to build upon language learners' cognitive and affective repertoire.

## 7. Conclusion and Implications

Drawing on a pre-test/post-test two-group experimental design, the study examined the impact of the cooperative learning technique on students' autonomy, critical thinking, and language achievement in two intact classes of 20 high school students each. The results outlined that cooperative learning led to notable improvements across all three variables. The findings of the study point to the idea that cooperative learning offers both cognitive and affective benefits for learners who engage in this instructional approach. One explanation is that students become acquainted with effective learning strategies—specifically, cooperative learning techniques—through peer interaction, discussion, and the exchange of ideas. Exposure to more successful strategies may influence learners at a deeper level than simple repetition, potentially prompting them to modify their study habits and learning techniques in a more deliberate and conscious manner.

Cooperative learning may also influence students' learning in several additional ways, including increased student talk time, greater positive reinforcement, enhanced interdependence, and the creation of a more supportive classroom environment. Such outcomes arise from the personal and academic support students receive from both peers and teachers (Ghaith, 2002). Another explanation relates to the goal-setting and goal-commitment features inherent in cooperative learning, due to the fact that the learning process of humans is strongly shaped by the goals individuals set for themselves (Locke & Latham, 1990). The improvement in students' classroom engagement can also be attributed to heightened motivation; in fact, increased motivation and greater engagement are likely to reinforce one another in a reciprocal manner.

Another reason is that group work enables students to learn more efficiently, as peers can provide mutual assistance and help one another move toward more advanced levels of understanding. This collaborative progression reflects Vygotsky's (1978) concept of the Zone of Proximal Development, which emphasizes the role of social interaction in extending learners' capabilities. This

highlights how learners can achieve more with the guidance and collaboration of peers than they can independently. In cooperative learning environments, students frequently provide and receive feedback, explanations, and scaffolding, enabling them to extend their cognitive and linguistic abilities beyond their existing level of competence. Additionally, cooperative learning environments expose students to more frequent and diverse forms of feedback, which they tend to comprehend and utilize more effectively than when working independently and receiving little to no feedback.

The findings that cooperative learning improved students' autonomy, critical thinking, and language achievement were strongly supported by previous literature. Cooperative learning was shown to enhance learners' intrinsic motivation, oral proficiency, and collaborative skills, thereby contributing to both cognitive and emotional growth in EFL contexts (Zhang, 2018). Similarly, Amiri (2014) demonstrated that autonomy along with critical thinking techniques significantly improved language learners' writing achievement, reinforcing the idea that cooperative learning fosters deeper engagement with language tasks. Research also confirmed that cooperative learning strategies directly strengthened critical thinking skills, as learners were encouraged to identify issues, reason logically, and exchange perspectives with peers (Garuda, 2023). Our results were in line with Brown (2019), who found that cooperative learning environments promoted autonomy and critical thinking through peer interaction and shared responsibility.

Moreover, Bećirović et al. (2022) highlighted that cooperative learning did improve motivation and achievement in language classrooms, further validating the dual cognitive and affective benefits observed in our study. Taken together, these studies corroborated our findings by showing that cooperative learning not only improved language performance but also reshaped learners' habits and strategies, leading to more conscious and autonomous approaches to learning.

Drawing on Bandura's (1993) notion of equal learning opportunity, the findings of this study highlight the fact that cooperative learning can serve as an effective pedagogical approach for enhancing key learner outcomes. A cooperative learning environment equips students to face greater academic challenges by encouraging increased effort and the use of more effective learning strategies. In addition, Weiner's (2000) attribution theory helps explain the rise in students' motivation and classroom engagement within cooperative groups. According to this theory, learners' motivation is strongly influenced by the "causal stability" of their previous successes and failures. Because these attributions are malleable, students can reshape them in ways that positively influence their future motivation and participation.

The observed improvements in autonomy, critical thinking, and language achievement can also be interpreted through Covington's (1992) framework. The pursuit of autonomy is a fundamental human drive, and one avenue through which students express this drive is by becoming academically self-directed. Consequently, learners strive to guard and enhance their academic competence, which as a result strengthens their autonomy, critical thinking, and language performance. In essence, cooperative learning environments foster students' self-belief, increase their motivation to exert effort, and support the development of autonomous learning behaviors.

## **Acknowledgment**

We all thank the participants for their time, energy, and cooperation.

### Authors' Contributions

All authors have conducted the study, collected data, analyzed and interpreted the data, and written up the manuscript.

### Funding

The study did not receive any funding.

### Conflict of Interests

The authors declare that there is no conflict of interest.

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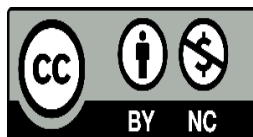
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