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Using Cooperative and Competitive Gamification to Enhance Speaking Accuracy and Fluency

[1] Hamid Marashi*
[2] Neda Ahmadi

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Abstract: Modern-day technology is being increasingly applied in English language teaching (ELT). As such, the use of games – or more technically, gamification – is drawing significant attention as a theme of research. Meanwhile, cooperative and competitive learning – albeit having been in wide practice for over five decades – are still being investigated actively in varying ELT contexts. Accordingly, this study was an attempt to compare the effects of cooperative and competitive gamification on speaking accuracy and fluency among adolescent learners of English as a foreign language (EFL). To fulfill this purpose, 54 learners (aged 10-15) studying at a private language school in Tehran were selected through nonrandom convenience sampling and homogenized using a piloted sample B1 Preliminary test. Subsequently, they were randomly assigned to a cooperative (n=26) and competitive (n=28) gamification groups. Both groups underwent an 18-session treatment by the same teacher using the same materials and games through the two aforesaid approaches. Once the treatment was over, the statistical analysis (two one-way ANCOVAs) revealed that the cooperative group significantly outperformed the competitive group in both speaking accuracy and fluency. The findings of the study suggest that both EFL teachers and syllabus designers may opt for cooperative learning with gamification in classrooms and materials, respectively, to enhance learners' speaking accuracy and fluency.

Keywords: Competitive Learning, Cooperative Learning, Gamification, Speaking Accuracy, Speaking Fluency

Introduction

Speaking accuracy and fluency are two critical components in the development and assessment of second language (L2) proficiency and their enhancement is thus a primary goal in language education. The two variables are fundamental aspects of oral communication among L2 learners striving for effective communication (Housen et al., 2012). Speaking accuracy is one's ability to produce correct utterances, free from errors in morphology, syntax, and pronunciation (Damayanti & Listyani, 2020). Accurate speaking is vital for clear communication, allowing learners to convey precise meanings and avoid misunderstandings (Gamlo, 2019). Theoretical frameworks such as Krashen's (1982) input hypothesis and Long's (1983) interaction hypothesis emphasize the importance of comprehensible input in achieving speaking accuracy; such theorizations suggest that learners need exposure to correct language forms in meaningful contexts to internalize and produce accurate language (Lyster et al., 2013).

Speaking fluency, on the other hand, pertains to the ability to speak smoothly with a natural flow, characterized by a lack of hesitations, pauses, and self-corrections (Leong & Ahmadi, 2017; Segalowitz, 2010). Fluency is often associated with the automaticity theory (Schneider & Shiffrin, 1977) which posits that frequent practice leads to automatic language production thus reducing cognitive load and enhancing the ability to speak spontaneously (Bailey & Fahad, 2021). Speaking

[1]Associate Professor of Applied Linguistics (Corresponding Author), Email: hamid.marashi@iauctb.ac.ir, Department of English, CT.C., Islamic Azad University, Tehran, Iran.
[2] MA in TEFL, Email: nedaahmadi8711@gmail.com, Department of English, CT.C., Islamic Azad University, Tehran, Iran.

fluency is often measured by the rate of speech, the length of utterances, and the frequency of pauses and fillers (Tavakoli & Wright, 2020). Just like speaking accuracy, speaking fluency is a critical component of communicative competence through which learners engage in meaningful interactions in the target language (Khodabandeh, 2021; Thai & Boers, 2016; Wang, 2014).

Enhancing speaking accuracy and fluency necessitates a teaching/learning environment which embraces the dynamic and interactive elements needed to practice and refine speaking skills effectively (Aziz & Kashinathan, 2021). To this end, innovative teaching methods such as gamification have gained attention for their potential to boost language learning (Baker et al., 2022). Gamification, which is the use of game-design elements in non-game contexts, has shown promise in educational settings (Deterding et al., 2011; Kim et al., 2021). Gamification involves integrating game elements into non-game environments to shape behavior, enhance motivation, and foster increased engagement (Watini & Setyowati, 2023) and has gained significant popularity in ELT research with ample such studies having been documented in the literature (e.g., Buckley & Doyle, 2016; Cheng et al., 2025; Dehghanzadeh et al., 2021; Sangtarash & Heidari, 2026; Vrcelj et al., 2023; Zeybek & Saygı, 2024).

Two extensively researched learning approaches which have found their way into the realm of gamification too exist within education: competitive and cooperative learning. Cooperative learning which was pioneered by Johnson and Johnson and also Slavin in the 1970s (Johnson & Johnson, 1989; Slavin, 1980) was founded of course upon millennia of the widespread tradition of communal cooperation all around the globe. Cooperative learning involves collaborative efforts towards a mutual goal and has been widely used in educational settings to promote collaboration, engagement, and academic achievement among students (Hamari et al., 2014; Marashi & Gholami, 2020). This approach is congruent with sociocultural theory conceptualized by Vygotsky's (1978) which highlights the significance of social interaction in cognitive development. By working collaboratively, learners can support each other, share knowledge, and boost confidence in their speaking skill (Gillies, 2016).

In contrast, competitive learning involves individual or group competition where students strive to outperform their peers or achieve specific goals through challenges, contests, or games (Gutiérrez-Braojos et al., 2019). Competitive learning environments often include elements such as leaderboard, rewards, and rankings to stimulate engagement and motivation among learners (Slavin, 2014), the latter of course being regarded as one of the most indispensable elements in all domains of education (Deci & Ryan, 1985; Dörnyei & Ryan, 2015). Competition can be a powerful tool to enhance student engagement in learning activities by fostering motivation, teamwork, and active learning (Felkey et al., 2023). The competitive approach emphasizes individual achievement and rewards, encouraging learners to strive for personal excellence (Johnson & Johnson, 2009). Competition can be both constructive and destructive in terms of motivation, depending on how it is presented: as an optimal challenge or as evaluative pressure (Johnson et al., 2014). Both competitive and cooperative learning have been studied throughout the decades and continue to be looked into in various ELT contexts extensively (e.g., Abramczyk & Jurkowski, 2020; Aporbo, 2023; Bailey et al., 2023b; Sadeghi & Ganji, 2020; Johnson & Johnson, 2018; Marashi & Hosseini, 2019; Namaziandost et al., 2019).

Review of the Related Literature

Speaking Accuracy and Fluency

In the context of EFL learning, achieving a balance between fluency and accuracy is crucial for developing overall speaking proficiency (Chambers, 1997: Housen et al., 2012). The complexity theory of language learning suggests that language acquisition is a dynamic process where fluency and accuracy develop concurrently through iterative cycles of practice and feedback (Bedore & Leonard, 2005; Larsen-Freeman, 1997). Both accuracy and fluency are essential for effective oral communication among L2 learners, who often struggle with balancing these aspects as they develop their language skills (Skehan, 2019).

Empirical studies perhaps unanimously demonstrate that developing speaking accuracy and fluency presents several challenges which are multifaceted and often interconnected. To this end, Al

Nakhalah (2016) identifies motivation as one major challenge since learners often find conventional ELT methods monotonous, leading to disengagement (Dörnyei & Ryan, 2015). To address this challenge, Lightbown and Spada (2013) asserted that integrating activities that promote both accuracy and fluency can ensure that learners can speak both accurately and fluidly in various contexts.

In the same vein, Lyster and Izquierdo (2009) and Xu et al. (2021) validated the importance of interaction in developing speaking accuracy and fluency thereby emphasizing the significant impact of explicit correction and recasts during interaction. Furthermore, De Jong and Perfetti (2011) and Angelelli et al. (2014) stressed the importance of practice and exposure and suggested that repeated performance on speaking tasks can significantly enhance fluency and accuracy during speech production.

Cooperative and Competitive Learning

Cooperative learning is a pedagogical paradigm that encourages students to work together in small groups with the aim of achieving a common goal and is grounded in the philosophy that learning is inherently a social process and it emphasizes the importance of collaboration and mutual support among students (Johnson & Johnson, 2005; Morano & Sia, 2025). This mode of learning is characterized by several key principles: "positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small group skills, and group processing" (Slavin, 2014, p. 6). These principles delineate that every single group participant is responsible for their own learning and also their peers' learning, fostering a sense of shared responsibility and collective success (Chowdhury, 2021).

Competitive learning, however, seeks to enhance individual motivation (Deutsch et al., 2006). By setting clear goals and offering tangible rewards, competitive learning encourages students to exert their best effort and achieve their personal academic objectives (Epstein & Harackiewicz, 1992). This approach is particularly effective for students thriving in contexts where their performance is measured against that of their peers (Johnson et al., 2000).

A significant amount of research has been reported in the literature on competitive and cooperative learning. Among those that delineate the advantageousness of cooperative learning, Lei et al. (2023) emphasized the effectiveness of cooperative learning in promoting learner motivation and learning outcomes, especially when they are architected on constructivism and collaborative principles. Also, Al Mahmud and Shaikh (2023) revealed that cooperative learning significantly improved reading comprehension and reading strategies. Additionally, Nikko and Salsabila's (2023) research demonstrated that students perceived cooperative learning positively, leading to enhanced academic achievements, motivation, and social values. On the other hand, Bailey et al. (2023a) highlighted the importance of competitive engagement and competition self-efficacy in mediating learner engagement and self-determination in EFL learning contexts, indicating that both competitive and cognitive engagement are crucial for learning outcomes.

Numerous Iranian studies also highlighted the impact of cooperative and competitive learning in EFL contexts. Again among the studies advocating cooperative learning, Nazari et al. (2021) found that implementing cooperative learning techniques in high school classrooms enhanced critical thinking and motivation, leading to improved small group capabilities. Also, Marashi and Khatami (2017) demonstrated that cooperative learning significantly improved creativity and motivation among EFL learners. Sadeghi and Ganji (2020) indicated that cooperative learning in university translation classes enhanced learners' self-confidence, self-esteem, and class engagement. Namaziandost et al. (2019) attributed EFL learners' enhanced speaking skills and motivation to cooperative learning. Marashi and Mokhlesi (2025) concluded that learners sitting in the flipped cooperative group outperformed those in the flipped competitive group in terms of their speaking.

On the other side of the spectrum, however, Marashi and Dibah (2013) showed that competitive learning benefited introverts' speaking more while extroverts performed better in cooperative settings. Salari and Hosseini (2019) too found that competitive learning was superior to reciprocal teaching of reading.

Gamification

In the context of ELT, gamification has been observed to significantly improve learners' standing in different aspects. The studies reported here are only very few examples of the positive impact of gamification. To begin with, Watini and Setyowati (2023) demonstrated enthusiasm for learning and overall academic achievements among learners. Zou et al. (2021) revealed that gamification can improve both students' learning experiences and their knowledge gain, making it a valuable tool in ELT.

Recent research suggests gamification transforms learning into a more dynamic and enjoyable experience whereby this increased engagement can lead to improved motivation and, consequently, better language learning outcomes (Hamari et al., 2014), especially in oral communication (Marina-Pacurucu & Argudo-Garzón, 2022) and speaking fluency and accuracy, specifically (Yaghoobi & Kazemi, 2023). In three separate studies, Ostovar-Namaghi et al. (2024), Huseinović (2023), and Khatoon et al. (2023) reported that interactive games serve as effective tools for enhancing EFL learners' engagement, motivation, and educational achievements in the classroom. Furthermore, Foroutan Far and Taghizadeh (2022) noted that EFL learners have shown improvements in their knowledge and use of collocations while using both digital and non-digital gamification strategies. Additionally, Babakhani and Tabatabaee-Yazdi (2022) demonstrated that using gamified tasks in the EFL classroom led to a significant impact on EFL learners' tendency to participate in communication and collaboration.

In the context of juxtaposing gamification with competitive and cooperative learning, Quynh (2022) asserted that while some studies demonstrated positive effects on vocabulary acquisition through competitive gamification, its influence on nuanced aspects such as pronunciation and grammatical accuracy remained ambiguous. On the other hand, Fahid et al. (2023) concluded that cooperative learning environments often associated with gamification have been linked to improved collaborative communication skills; yet, their specific contribution to individual learners' speaking accuracy and fluency requires further scrutiny.

Purpose of the Study

As elaborated above, extensive research has been documented on gamification and cooperative and competitive learning. Most studies highlight the overall benefit of gamification and cooperative learning (e.g., Cheng et al., 2025; Marashi & Sanatipoor, 2015) while there is also noteworthy evidence on the usefulness of competitive learning in specific contexts (Bailey et al., 2023a). Most existing research has centered on the overall impact of gamification on language learning outcomes while the researchers were able to locate only two studies – as detailed in the previous section – on the specific impacts of cooperative versus competitive gamification on vocabulary learning and collaborative communication. Hence, there seems to be a considerable need for further studies on competitive/cooperative gamification, not to mention that the two studies reported do not address the speaking skill. One perhaps needs to bear in mind that the results of a study on the impact of competitive/cooperative gamification on EFL learners' vocabulary cannot necessarily be extended to speaking as the dynamic interaction involved in cooperative gamification may influence the learners' speaking skill quite differently.

Moreover, much of the research on competitive/cooperative learning and gamification has concentrated on other language skills including reading and writing. Accordingly, there seems to be a notable gap in the ELT research literature comparing the impact of cooperative and competitive gamification on EFL learners' speaking accuracy and fluency. To this end, the following research questions were formulated in this study:

Research Question One: Is there any significant difference between the effect of competitive and cooperative gamification on adolescent EFL learners' speaking accuracy?

Research Question Two: Is there any significant difference between the effect of competitive and cooperative gamification on adolescent EFL learners' speaking fluency?

With the current ever-increasing trend of applying gamification in the ELT ecosystem and the well-documented potential of gamification towards enhancing engagement, the need to extend the avenue of research in this regard is perhaps of paramount importance in order to identify the most optimal modalities of employing gamification strategies. Hence, by means of conducting research on the comparative impact of cooperative and competitive gamification on EFL learners' speaking accuracy and fluency, the researchers attempted to obtain a perhaps more profound comprehension of how the two gamification strategies would influence the aforesaid objective. The outcomes of this investigation may provide practical recommendations for those educators and practitioners eager to design effective gamified language learning activities that are specifically tailored to enhance both the accuracy and fluency of speaking. Examining the impacts of cooperative and competitive gamification on language learning may thus result in the creation of inventive teaching approaches that respond to the diverse preferences and requirements of learners.

Method

This section presents a detailed account of the process of this quasi-experimental pretest-posttest comparison group study in order to address the two research questions.

Participants

The participants in this study were 54 EFL learners studying at a private language school in Tehran aged 10-15 who were selected from an initial pool of 60 students through nonrandom convenience sampling following their performance on a sample language proficiency test (those whose scores fell within one standard deviation above and below the mean). These 54 participants were subsequently assigned randomly into two experimental groups: 26 in the cooperative gamification group and 28 in the competitive gamification group). The total number of females and males was 29 and 25, respectively. The test was piloted among another sample of 30 intermediate learners at the language school beforehand.

The participants' parents were informed about their children's participation in this research and were assured that their personal information would remain confidential throughout the study with their scores bearing no impact on their educational status at the language school. Moreover, the participants' performance on the speaking sections of the proficiency test was scored by both researchers who served as the two raters The inter-rater reliability of the two had been established a priori ($r = 0.744$, $p = 0.0001 < 0.01$).

Instrumentation and Materials

Several instructional and assessment apparatus were utilized in this study, each of which is detailed below.

B1 Preliminary

For the purpose of homogenizing the participants at the outset of the study, a sample B1 Preliminary was administered. B1 preliminary, formerly known as Cambridge English Preliminary (PET), is one of Cambridge Assessment English exams for the intermediate level. The test originally contained 60 items but eight items were discarded following item analysis after the piloting (the reliability of which stood at 0.89, using Cronbach's alpha).

Rating Scale for the B1 Preliminary Speaking Part

The B1 preliminary assessment scales were used to assess the four parts of the speaking paper. This assessment scale has four criteria including grammar and vocabulary, discourse management, pronunciation, and interactive communication for scoring the candidates' performance.

Speaking Accuracy and Fluency Pretest

The speaking paper of the B1 Preliminary test – described above – was also used as the pretest in this study to measure the speaking accuracy and fluency of the 54 participants in the two experimental

groups. It should be noted that the preliminary speaking paper was administered only once but the participants' responses were used for two different purposes: once as part of the homogenization process and subsequently as the two pretests described below.

Speaking Accuracy and Fluency Posttest

The speaking paper of the another sample B1 Preliminary test was used as the posttest to measure the speaking accuracy and fluency of the 54 participants once the treatment was over.

Measurement of Speaking Accuracy (EFT/T Ratio)

Speaking accuracy in both the pre- and posttest was measured using the Error-Free T-unit to Total T-unit ratio (EFT/T) formulated by Foster and Skehan (1996) which is arguably the most widespread rubric for measuring this construct (Housen et al., 2012; Wang, 2014). This method quantifies the proportion of grammatically correct speech units (T-units) to the total number of speech units produced during the speaking tests. A T-unit is a main clause and its probable subordinate clauses. For the purpose of this study, recordings of the pretest and posttest were transcribed, and each T-unit was analyzed for grammatical correctness. The ratio of error-free T-units to total T-units was calculated for each participant, providing a clear measurement of speaking accuracy and allowing for comparison between the two groups and between pretest and posttest results. For instance, the score of a participant who produced 68 T-units, out of which 41 were Error-Free T-units would be 41 divided by 68 or 0.60. Again, the two raters (described earlier) participated in the rating.

Measurement of Speaking Fluency (WPM)

Speaking fluency in both the pre- and posttest was assessed using the Words Per Minute (WPM) metric again formulated by Foster and Skehan (1996); this procedure too has been reported for its extensive application in the ELT literature (Housen et al., 2012; Tavakoli & Wright, 2020). This measure calculates the total number of words spoken per minute during the oral tasks, providing an objective assessment of the participants' ability to produce language at a natural pace. The participants' transcribed responses on the pre- and posttest were analyzed and the total word count was divided by the speaking time to calculate the WPM. This fluency metric helped determine how smoothly participants could speak.

American English File 3

The course book used for both experimental groups alike in this study was American English File 3 by Latham-Koenig et al. (2020). It consists of 10 units; each unit comprises two lessons which contain different tasks pertaining to all skills and subskills. In the current study, units 5-7 were covered. Moreover, the workbook including 10 units were also used.

Kahoot!

Kahoot! is an interactive learning platform launched in 2013 by the Norwegian University of Science and Technology (NTNU). Kahoot! is designed to engage students and educators through gamified quizzes and collaborative learning activities. The platform covers various subjects such as mathematics, science, languages, and general knowledge, making it a versatile tool for both academic and informal settings.

Kahoot! allows users to create, share, and participate in quizzes, called "kahoots" that are typically played in real-time, fostering a dynamic and social learning experience. These games can be hosted live in classrooms or online, with participants joining via a unique game PIN on their devices. The platform which was used in both experimental groups also offers an asynchronous mode called "Kahoot! Challenges" for self-paced learning.

Quizlet

Quizlet is an educational platform headquartered in San Francisco, California. The platform is designed to help students learn through digital flashcards, interactive quizzes, and various gamified study tools. It supports learning across a wide range of subjects, including languages, science, mathematics, and

history. Quizlet's core mission is to make studying accessible and effective for everyone, and its tools are used by students, teachers, and independent learners worldwide.

Initially launched as a web-based tool, Quizlet has since expanded to mobile platforms, including iOS and Android, offering users on-the-go access to study materials. Users can create their own study sets or access millions of pre-existing ones created by the community. The platform which again was used in both experimental groups in this study features modes like “Learn” which adapts to a user’s knowledge level, and “Match”, a time-based game that makes studying engaging and interactive.

Semi-Structured Interviews

A semi-structured interview was conducted with the participation of 20 learners – 10 in each experimental group, who accepted to participate in the interview – after the completion of the treatment. The open-ended interview focused on providing the learners with the opportunity to recount their experience with the treatment. The purpose of this interview was simply to elicit some narrative information alongside the quantitative data which was obtained through the study. Accordingly, as this was not a mixed-methods study, no further analysis such as coding was conducted and the narratives were used to corroborate the findings in the discussion of the results only.

The interview took between 5-10 minutes and was conducted by the teacher of both experimental groups (one of the researchers). The interview began with asking a general question on how the participant felt about the treatment. Depending on the participant’s response, there were follow-up questions as well. Naturally, the interview was conducted in Farsi to enable the intermediate-level learners to openly express their views with no language barriers. Again, the parents of the 20 adolescent learners had given their consent for the interviews and the recordings for later transcription.

Procedure

As described above, 54 participants were chosen out of an initial 60 learners based on their performance on the language proficiency test and thence put in two different experimental groups. Next, their speaking fluency and accuracy was assessed and they were thus ready for the treatment which spanned 18 sessions of 90 minutes each held twice a week. The same teacher, who was one of the researchers, taught both groups using the same materials and games described above. The only point of departure between the two groups, however, was the fact that one group was exposed to competitive gamification while the other experienced cooperative gamification.

Competitive Gamification

The competitive group participated in gamified activities designed to encourage rivalry, motivation, and a sense of achievement. The tasks required the use of points, leaderboards, and timed challenges to both motivate and maintain student interest. The learners used Quizlet Blast to practice vocabulary in which they raced to the matching of items of vocabulary as closely and as accurately as possible. For example, following the study of Unit 5A (Sporting Superstitions), they rushed to finish matches in terms of a sports activity. Similarly, Kahoot! quizzes featured timed questions and dynamic leaderboards, creating a lively atmosphere and fostering competition among participants.

Grammar activities included timed challenges such as Quizlet Match, where students earned points for quickly and correctly pairing items. For example, the learners practiced distinguishing between the past tense and the present perfect as part of Unit 5B. Competitive Kahoot! quizzes incorporated countdown timers and instant feedback, driving the learners to strive for accuracy and speed while mastering grammar concepts.

Speaking activities were gamified to promote competitive engagement. In role-play contests, the learners earned points for fluency, accuracy, and creativity. For example, in debates about career plans (Unit 7B), the teams argued persuasively while incorporating target grammar such as conditionals and future time clauses. Furthermore, fluency competitions motivated participants to flow freely with speech without interruptions, which further helped them to acquire true-time communications skills under stress.

The listening tasks of the course book were converted into games using Quizlet Blast. Subsequent to playing back recordings, the learners challenged each other to answer questions of comprehension or to determine significant grammatical paradigms for scoring. In addition, pronunciation drills were gamified with individuals or groups gaining points for correct pronunciation of words or sentences which of course stimulated motivation and consequent improvement.

The reading passages of the course book were paired with timed challenges to enhance engagement. After reading, the learners used Quizlet Match to review vocabulary, earning points for speed and accuracy. In order to facilitate comprehension, the learners summarized passages competitively, each getting points by means of fluency, grammatical correctness, and effectiveness. Challenging debates based upon readings such as Technology in Education (Unit 7) allowed competitive language use in a participatory environment.

Cooperative Gamification

The cooperative group engaged in gamified activities prioritizing teamwork, peer support, and shared learning experiences. These tasks promoted collaborative learning among the students, leading them to collaborate and grow together. The learners applied Quizlet Live to vocabulary practice in pairs, or in small groups. For example, after learning Unit 6A Behind the Lines, they worked together to select and fix errors during matching exercises. In one such instance, a learner mistakenly matched *If I were you* with *doing more exercise* (which had to be matched with *I am thinking about*), and the other learner in the pair cooperative group suggested *I would try harder* as the correct match for *If I were you.* Kahoot! Team Mode was also utilized, prompting collaborative efforts in the form of vocabulary quizzes, which led to mutual learning and a communal feeling of success.

Grammatical activities included the learners working together to build a sentence and edit each other's sentences. For instance, pairs collaborated to build passive structures discussed in Unit 6B. In Kahoot! Team Mode, the learners participated in asking and answering each other grammatical quiz questions in order to deepen their knowledge through interaction and peer learning. Speaking activities were designed to promote collaboration. In role-plays such as creating dialogues of notable events (Unit 5B), pairs co-wrote scripts, gave peer feedback, and corrected them before retelling their dialogues. Discussions in small groups covered areas such as future career goals (Unit 7B) in which the learners utilized target grammar and vocabulary while providing peer feedback in order to enhance fluency and accuracy.

The listening tasks in the course book encouraged group collaboration after playing recordings. The learners worked in pairs or small groups to explain content and respond to comprehension questions in Quizlet Live. Pronunciation drills were gamified, with the learners working on challenging sentences in pairs, providing feedback from and to each other, and also engaging in exercises through using Quizlet Flashcards to review vocabulary and pronunciation quality.

Reading tasks integrated gamified teamwork. In jigsaw reading activities, each learner became an 'expert' on a specific section of a passage – such as past travel experiences in Unit 5 – and taught their peers. Vocabulary was examined as a group using Quizlet Flashcards; then the learners engaged in group activities, exploring how to create grammatically correct summaries together. These summaries were then presented as a group. Other activities (e.g., Quizlet Live) encouraged vocabulary acquisition in a playful and engaging cooperative setting. Once the instruction period was over, all the 54 participants took the posttest. Also, the semi-structured interview was conducted.

Results

This section details chronologically the statistical analyses conducted to respond to the two questions presented earlier. Also, in accordance with the research questions, the following two research hypotheses were formulated:

H_{01}: There is no significant difference between the effect of competitive and cooperative gamification on adolescent EFL learners' speaking accuracy.

H_{02}: There is no significant difference between the effect of competitive and cooperative gamification on adolescent EFL learners' speaking fluency.

Participant Selection

Following the piloting of the sample PET and the item analysis which led to discarding eight faulty items, the modified test was administered to the original 60 participants.

Descriptive Statistics of the PET Administration

The descriptive statistics of this process are presented in Table 1.

Table 1
Descriptive Statistics of the PET Administration

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
PET administration	60	26.0	54.5	38.922	6.4208	-.331	.314
Valid N (listwise)	30						

As can be seen, the mean and standard deviation being 38.92 and 6.43, respectively. Accordingly, the 54 participants scoring between 32.49 and 44.35 were selected as the main participants of this study.

Pretests

Table 2 displays the descriptive statistics of the pretest scores.

Table 2
Descriptive Statistics of the Pretest Scores

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Coop Acu Pre	26	.30	.55	.4308	.09600	.048	.456
Com Acu Pre	28	.30	.55	.4321	.09643	.049	.441
Coop Flu Pre	26	40	75	56.15	13.806	.271	.456
Com Flu Pre	28	40	80	57.50	13.642	.242	.441
Valid N (listwise)	26						

The mean and standard deviation of the cooperative gamification group on the speaking accuracy pretest were 0.430 and 0.09, respectively, while those of the competitive gamification group were 0.432 and 0.09, respectively. Regarding the speaking fluency pretest scores, the mean and standard deviation of the cooperative gamification group were 56.15 and 13.81, respectively, while those of the competitive gamification group were 57.50 and 13.64, respectively. Furthermore, all scores enjoyed normality (0.048 / 0.456 = 0.105, 0.049 / 0.441 = 0.111, 0.271 / 0.456 = 0.594, and 0.242 / 0.441 = 0.549). Indeed, the difference between the two groups was very marginal on the accuracy pretest but they did represent some difference regarding their fluency at this stage.

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Posttests

Table 3 displays the descriptive statistics of the posttest scores.

Table 3
Descriptive Statistics of the Posttest Scores

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Coop Acu Post	26	.41	.75	.5842	.10374	.138	.456
Com Acu Post	28	.38	.74	.5414	.11105	-.014	.441
Coop Flu Post	26	56	100	75.77	15.290	.302	.456
Com Flu Post	28	51	98	72.39	14.645	.114	.441
Valid N (listwise)	26						

The mean and standard deviation of the cooperative gamification group on the accuracy posttest were 0.58 and 0.10, respectively, while those of the competitive gamification group were 0.54 and 0.11, respectively. As for the fluency posttest scores, the mean and standard deviation of the cooperative gamification group were 75.77 and 15.29, respectively, while those of the competitive gamification group were 72.39 and 14.64, respectively. Furthermore, all scores enjoyed normality (0.138 / 0.456 = 0.302, -0.014 / 0.441 = -0.031, 0.302 / 0.456 = 0.662, and 0.114 / 0.441 = 0.258).

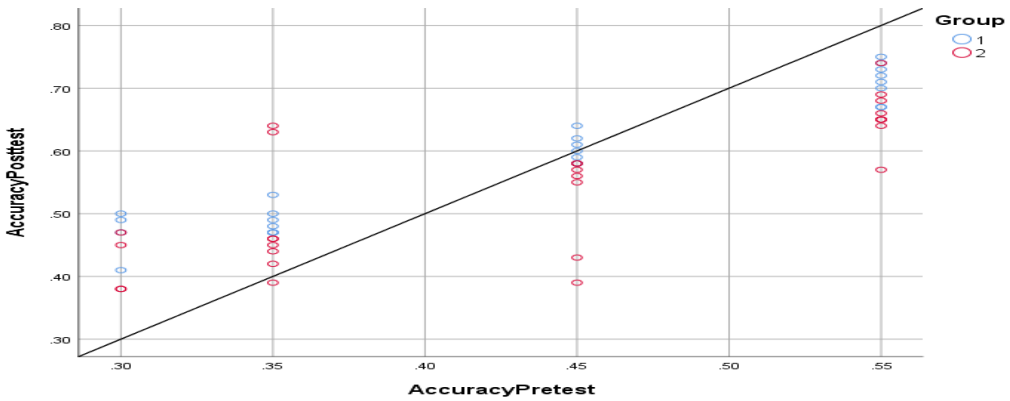
Testing the Null Hypotheses

In order to test the two null hypotheses, two series of analysis of covariance (ANCOVA) were run on both groups' scores on the two pre- and posttests.

Testing the First Null Hypothesis

To run the ANCOVA, the assumptions for running this parametric test were first checked. To begin with, all sets of scores of course enjoyed normality as demonstrated earlier (Tables 2 and 3); hence, this prerequisite was met. The second procedure was testing the homogeneity of variance through the Levene's test; the variances were not significantly different ($F_{(1,52)} = 3.673$, $p = 0.061 > 0.05$). As one covariate was being investigated (speaking accuracy pretest), the third assumption of the correlation among covariates did not apply in this case. The fourth assumption is linearity; as can be seen in Figure 1, the general distribution of the scores was almost linear.

Figure 1
Histogram of the Linearity of the Scores Obtained by the Two Groups on the Accuracy Pretest and Posttest



The fifth and final assumption is that of homogeneity of regression slopes. Table 4 shows that the interaction (i.e. Group * Pretest) is 0.346 which is larger than 0.05 thus indicating that the assumption of homogeneity of regression slopes has not been violated in this set of scores.

Table 4
Tests of Between-Subjects Effects (1)

Source	Type III Sum of Squares	df	Mean Square	*F*	Sig.	Partial Eta Squared
Corrected Model	.471[a]	3	.157	50.630	.000	.752
Intercept	.053	1	.053	17.187	.000	.256
Group	.000	1	.000	.095	.759	.002
Pretest	.446	1	.446	143.743	.000	.742
Group * Pretest	.003	1	.003	.906	.346	.018
Error	.155	50	.003			
Total	17.685	54				
Corrected Total	.627	53				

[a]. R Squared = 0.752 (Adjusted R Squared = 0.737)

With the above assumptions in place, running an ANCOVA was legitimized.

Table 5
Tests of Between-Subjects Effects (2)

Source	Type III Sum of Squares	df	Mean Square	*F*	Sig.	Partial Eta Squared
Corrected Model	.469[a]	2	.234	75.632	.000	.748
Intercept	.054	1	.054	17.569	.000	.256
Pretest	.444	1	.444	143.292	.000	.738
Group	.026	1	.026	8.470	.005	.142
Error	.158	51	.003			
Total	17.685	54				
Corrected Total	.627	53				

[a]. R Squared = .748 (Adjusted R Squared = .738)

According to Table 5, the speaking accuracy pretest scores (the covariate in the model) were significant ($F = 143.292$, $p = 0.0001 < 0.05$) thus demonstrating that there was a significant relationship between the covariate (the pretest) and the dependent variable (the posttest) while controlling for the independent variable ($F = 8.470$, $p = 0.005 < 0.05$). Hence, the null hypothesis of the study which stated that there is no significant difference between the impact of cooperative and competitive gamification on EFL learners' speaking accuracy was rejected.

Going back to Tables 2 and 3, the increase in the cooperative gamification group's mean score from the pre- to the posttest (0.5842 – 0.4308 = 0.1534) was higher than that of the competitive gamification group (0.5414 – 0.4321 = 0.1093). Accordingly, the cooperative gamification benefitted significantly more than the competitive gamification group in terms of boosting their speaking accuracy as a result of the intervention. Furthermore, the effect size was 0.14 which is reckoned a moderate effect size by Larson-Hall (2010).

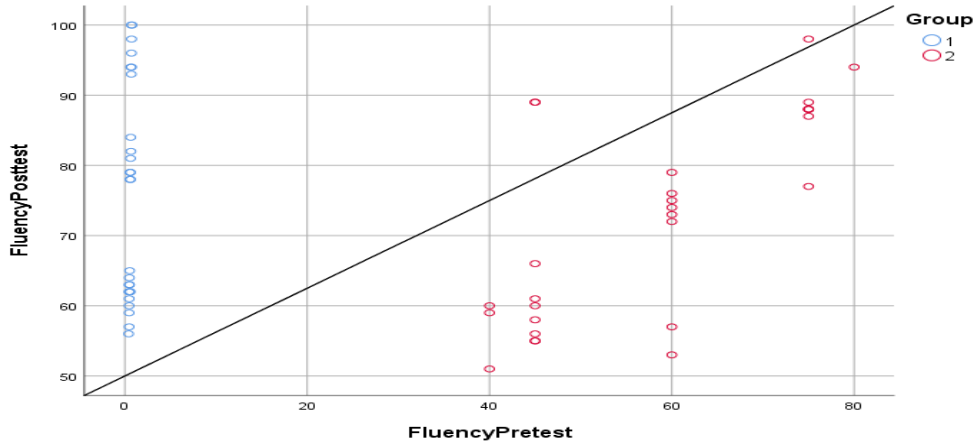
Testing the Second Null Hypothesis

The same procedure was run to test the second null hypothesis. First, the prerequisites for running this parametric test are discussed. To begin with, all sets of scores enjoyed normality as demonstrated earlier (Tables 2 and 3); hence, this prerequisite was met. The second procedure was testing the homogeneity of variance for which the Levene's test was run; the variances were not significantly different ($F_{(1,52)} = 6.938$, $p = 0.081 > 0.05$). Again, as one covariate is being investigated (speaking fluency pretest), the

third assumption of the correlation among covariates did not apply in this case. Fourth is linearity; Figure 2 shows that the distribution of the scores was almost linear.

Figure 2

Histogram of the Linearity of the Scores Obtained by the Two Groups on the Fluency Pretest and Posttest



The fifth and final assumption is that of homogeneity of regression slopes. Table 6 shows that the interaction (i.e. Group * Pretest) was 0.655 which is larger than 0.05 thus indicating that the assumption of homogeneity of regression slopes has not been violated in this set of scores.

Table 6

Tests of Between-Subjects Effects (1)

Source	Type III Sum of Squares	df	Mean Square	*F*	Sig.	Partial Eta Squared
Corrected Model	8715.801[a]	3	2905.267	47.268	.000	.739
Intercept	194.932	1	194.932	3.171	.081	.060
Group	609.610	1	609.610	9.918	.003	.166
Pretest	5536.784	1	5536.784	90.082	.000	.643
Group * Pretest	5416.478	1	5416.478	.881	.655	.638
Error	3073.180	50	61.464			
Total	307641.000	54				
Corrected Total	11788.981	53				

[a]. R Squared = 0.739 (Adjusted R Squared = 0.724)

With the above assumptions in place, running an ANCOVA was legitimized.

Table 7

Tests of Between-Subjects Effects (2)

Source	Type III Sum of Squares	df	Mean Square	*F*	Sig.	Partial Eta Squared
Corrected Model	3299.323[a]	2	1649.662	9.910	.000	.280
Intercept	14011.737	1	14011.737	84.173	.000	.623
Pretest	3145.635	1	3145.635	18.897	.000	.270
Group	3259.923	1	3259.923	19.583	.000	.277
Error	8489.658	51	166.464			
Total	307641.000	54				
Corrected Total	11788.981	53				

[a]. R Squared = .280 (Adjusted R Squared = .252)

According to Table 7, the speaking fluency pretest scores (the covariate in the model) were significant

(F = 18.897, p = 0.0001 < 0.05) thus demonstrating that prior to the treatment, there was a significant difference between the two groups in terms of their speaking fluency. Furthermore, there was a significant relationship between the covariate (the pretest) and the dependent variable (the posttest) while controlling for the independent variable (F = 19.583, p = 0.001 < 0.05). Hence, the null hypothesis of the study which stated that there is no significant difference between the impact of cooperative and competitive gamification on EFL learners' speaking fluency was rejected with those in the cooperative gamification group who gained a higher mean (Table 3) bearing a significantly higher degree of speaking fluency than those in the competitive gamification group.

Going back to Tables 2 and 3, the increase in the cooperative gamification group's mean score from the pre- to the posttest (75.77 – 56.15 = 19.59) was higher than that of the competitive gamification group (72.39 – 57.50 = 14.89). Accordingly, the cooperative gamification benefitted significantly more than the competitive gamification group in terms of improving their speaking fluency as a result of the intervention. Furthermore, the effect size was 0.28 which is reckoned a close to strong effect size by Larson-Hall (2010).

Discussion

The results of this study demonstrated that the speaking fluency and accuracy of learners in the cooperative gamification group improved at a significantly higher degree compared to those of the learners in the competitive gamification group. These findings align with research on cooperative learning, competitive learning, and gamification in EFL contexts, particularly for speaking skills.

In the realm of cooperative learning, the literature is simply replete with studies showing the advantageousness of cooperative learning in ELT (e.g., Altun & Sabah, 2020; Altamimi & Attamimi, 2014; Lucena & San Jose, 2016; Marashi & Baygzadeh, 2010; Memari Hanjani & Li, 2017). Johnson and Johnson (1999) found that cooperative learning environments, characterized by positive interdependence and peer support, enhance language outcomes by fostering collaboration and reducing performance anxiety. Their meta-analysis showed moderate to large effect sizes for oral skills in cooperative settings, supporting the results obtained by the cooperative gamification group in this study.

The outcome of this study is also congruent with that of Namaziandost et al. (2019) who reported the significant effect of cooperative learning on enhancing speaking and motivation among EFL learners. Nguyen et al., (2021) showed the overall positive impact of cooperative learning on EFL learners' overall achievement while Nowicka and Wilczyńska (2011) showed how cooperative learning enhanced such learners' authenticity in oral communication. Also in line with the previous studies and the present research, Tamimy et al. (2023) delineated the considerable usefulness of cooperative learning in the ELT classroom. The above studies are merely samples of the pertinent extended literature.

Regarding competitive learning, Deutsch et al. (2006) established that competitive environments can enhance individual effort but may increase stress, potentially hindering performance for some learners; this conclusion may align with the competitive gamification group's lower gains reported in this study, possibly due to stress-induced underperformance. Furthermore, Zhang and Hasim (2023) noted that competitive gamification's reliance on extrinsic rewards (e.g., points and badges) can lead to highly short-lived motivation which could explain the competitive group's lower posttest scores at the end of this study. However, the outcome of the present research is arguably not aligned with the finding of Dindar et al. (2021) who explored gamified cooperation and competition in vocabulary learning and noted no considerable difference in achievement between the two approaches; this discrepancy may be due to the fact that unlike vocabulary learning which is perhaps very much an individual activity and thus does not require extensive cooperative engagement from others, speaking which is by nature happening through dynamic interaction is significantly influenced by cooperative learning.

With respect to gamification, the result of the present study resonates with the finding reported by Simbaña-Simbaña et al. (2023) where a sample of adolescent EFL learners in Ecuador experienced

significant improvement in pronunciation and fluency. A similar finding was documented by Qiao et al. (2025) among Chinese undergraduates, finding that gamification enhanced their speaking skills and engagement. Interestingly, while revealing the same positive impact of gamification on vocabulary learning, Zou et al. (2020) found limited impact on speaking; by taking the above finding into consideration, one may argue that gamification alone is not enough when it comes to improving learners' speaking, thereby underscoring the importance of the present study's emphasis on the significance of juxtaposing gamification with cooperative learning in order to achieve this result.

The cooperative gamification group's improvements in speaking accuracy and fluency can be possibly attributed to the supportive environment created by collaborative tasks. This point was very much evidenced by the learners in the cooperative group who expressed enthusiasm for cooperative tasks during the semi-structured interviews, highlighting the supportive environment as a key strength. One learner noted that, "Working together on Quizlet Live was fun because we helped each other find the right words, and I felt less scared to make mistakes". The learners also appreciated peer feedback in tasks such as sentence-building for passive structures with one learner stating that, "My partner corrected my grammar, and I learned how to say things better without feeling embarrassed". This peer support engendered in gamified cooperative learning can be a major driver behind the leaners' success as described by Deci and Ryan's (1985) self-determination theory which enhances motivation and encourages active speaking practice.

Another possible element in the significant rise of the cooperative gamification group may be the practice of group role-plays such as creating dialogues about notable events that were particularly valued for encouraging creativity and collaboration. One learner shared in the interview that, "Writing dialogues with my group was exciting because we all added ideas, and practicing together made me speak more fluently" with another remarking that, "Teaching my part to the group made me understand the text better and practice speaking clearly". These responses may underscore how cooperative gamification tasks promoted speaking practice and aligned with the group's superior performance which concords with Krashen's (1982) affective filter hypothesis positing that reduced anxiety in cooperative settings lowers the affective barrier, enabling confident oral production.

There were of course a number of learners in the competitive gamification group who spoke of their positive experiences with rivalry-based tasks during the interviews, emphasizing the excitement and motivation driven by points, leaderboards, and timed challenges. Quizlet Blast used for vocabulary practice was a favorite, with one learner stating that, "Racing to match words in Quizlet Blast was thrilling, and I tried hard to get a high score". Another learner stated that, "Seeing my name on the leaderboard made me want to answer questions correctly and quickly". In addition, speaking activities such as role-play contests and debates were appreciated for their competitive edge. A learner commented that, "The debate was exciting because we earned points for speaking well, and I practiced conditionals a lot". However, unanimity was not there to be found among the participants who underwent the competitive gamification treatment as some learners reported stress from activities such as leaderboards, with one saying that, "I felt nervous when I wasn't at the top, and it made it harder to speak sometimes".

There may have of course been certain other factors at work too in cooperative learning leading to more positive results. Cooperative learning may have lowered learners' affective filter as they may have felt more at ease in the cooperative rather than the competitive process and thus practiced speaking. Such a modality may have also increased risk-taking among the learners who were not exposed to the often predominant peer pressure of competitive learning. This again would have encouraged them to speak more and increase the quantity of their output. Furthermore, in the context of cooperative learning, learners would also have further opportunities for feedback which per se would enable the learners to enhance their speaking fluency and accuracy.

All in all, both cooperative and competitive gamification enhanced learners' engagement and speaking skills; nevertheless, the cooperative approach was significantly more effective as the result of this research suggests perhaps due to its supportive environment which was attested by the learners' unanimously positive feedback and higher posttest scores and of course documented extensively by the

body of theory and praxis in the ELT literature, a fraction of which has been presented here.

Conclusion

The results of the study reported here indicated the positive impact of cooperative gamification with adolescent EFL learners' speaking accuracy and fluency, as evidenced by the quantitative results and learner interviews. Based on these findings, this study delineates the following implications to enhance oral communication skills. To begin with, EFL Teachers may choose to integrate cooperative tasks such as group role-plays and peer-edited dialogues to build collaboration and competitive tasks, such as role-play contests (which were reported to be favorable by some of the learners in the competitive group) to drive engagement. Accordingly, a hybrid approach may address diverse learner needs, ensuring inclusivity without marginalization. Implementation requires reliable technology and training for tools such as Kahoot!

The findings of this study showed that cooperative gamification tasks possibly foster a low-anxiety environment thereby promoting speaking skills as attested by the quantitative analysis and also noted by the learners. At the same time, some of the learners also stated the merits of certain competitive tasks, namely leaderboards, which motivate engagement. Learners may thus be encouraged to adopt actively the latter in a manner transformed and assimilated with cooperative activities rather than putting aside all competitive tasks. Accordingly, this modality of attempting to synthesize certain competitive gamification tasks into an overall gamified cooperative learning pretext would contribute to further extending the array of pedagogical possibilities in such classrooms.

The results of this study further advocate integrating cooperative gamification into EFL syllabi to enhance speaking skills, addressing diverse learner profiles. As noted earlier, cooperative activities such as group-based tasks including Kahoot! and Quizlet foster low-anxiety collaboration thereby supporting accuracy and fluency. Syllabi could include scaffolded cooperative tasks such as peer dialogues to balance engagement and inclusivity while curricula may specify technology requirements and teacher training resources to ensure effective implementation of these games. Assessments could thus measure linguistic and collaborative skills thereby accommodating personality and gender differences to optimize outcomes and prevent marginalization and ensure learning opportunities which are as equitable as possible for as many learners as can be.

It is worth noting that this study was subject to certain limitations that suggest the following future research directions. To begin with, the unequal gender distribution of the participants may warrant exploration through subgroup analyses or studies controlling for gender to clarify its role as an intervening variable. Secondly, the adolescent age group participating in this study was another limitation; hence, studies with other age cohorts are recommended to ascertain whether the same finding would apply or not. In addition to the participants being adolescents only, their age range, that is 10-15, may have been an intervening variable in this study as the cognitive and psychosocial differences within this age group are not necessarily insignificant. Replicating this study among a group with a smaller age variation is thus recommended.

Thirdly, the study measured speaking accuracy and fluency; future research could explore additional speaking dimensions such as complexity, pronunciation, discourse management, or interactive communication to provide a comprehensive understanding of the impact of the treatment. A fourth point worth mentioning is that the present study was conducted within the context of general English classrooms. It would thus be informative to implement the same study within EAP and/or ESP environments to see whether the same outcome would be realized or not.

Furthermore, the fact that the teacher herself was one of the researchers and, at the same time, conducted the semi-structured interviews may have led to expectancy bias, subtle differential enthusiasm, and interview confirmation bias. Albeit the teacher/researcher was very cautious to minimize the aforesaid issues, methodologically one could annul such an effect in its totality; accordingly, this singularity may have served as an intervening variable in this study. Another point is concerning the quantitative design of this research; despite the fact that certain narratives were reported

as a result of the semi-structured interviews, the study did not enjoy a mixed-methods design. To this end, interested researchers may wish to conduct the same study with a richer qual-quan design. Finally, investigating learner characteristics such as personality, cognitive, or learning styles or motivation may elucidate why cooperative gamification was more effective and identify optimal conditions for implementation.

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The writers declare that there were no conflicts of interest in the entire process of conducting this study.

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