Polo del Conocimiento

Pol. Con. (Edición núm. 107) Vol. 10, No 6
Junio 2025, pp. 2329-2341
ISSN: 2550 - 682X
DOI: 10.23857/pc.v10i6.9815

Efecto del Aprendizaje Colaborativo en el Desarrollo de las Habilidades de Lectura de Alumno de Inglés Como Lengua Extranjera de Nivel Universitario

Effects of cooperative learning in developing reading skills on University EFL learners

O efeito da aprendizagem colaborativa no desenvolvimento de competências de leitura em alunos de inglês como língua estrangeira (EFL) de nível universitário

Pablo Luis Vásconez Mera [I]
pvasconezm@utb.edu.ec
https://orcid.org/0000-0001-9035-7166

Nelly Victoria Ley Leyva [II]
nley@utb.edu.ec
https://orcid.org/0000-0003-2296-7354

Erika Paola García León [III]
egarcia@utb.edu.ec
https://orcid.org/0000-0001-8203-6434

María Grazzia González Quinto [IV]
mgonzalezq@utb.edu.ec
https://orcid.org/0009-0003-3593-5383

Correspondencia: pvasconezm@utb.edu.ec

Ciencias de la Educación
Artículo de Investigación

*** Recibido:** 26 de abril de 2025 ***Aceptado:** 12 de mayo de 2025 *** Publicado:** 26 de junio de 2025

I. Universidad Técnica de Babahoyo, Babahoyo, Ecuador, Docente del Centro de Idiomas, Ecuador.
II. Universidad Técnica de Babahoyo, Babahoyo, Ecuador, Docente del Centro de Idiomas, Ecuador.
III. Universidad Técnica de Babahoyo, Babahoyo, Ecuador, Coordinadora del Centro de Idiomas, Ecuador.
IV. Universidad Técnica de Babahoyo, Babahoyo, Ecuador, Docente del Centro de Idiomas, Ecuador.

Resumen

Este estudio investiga los efectos de las técnicas de aprendizaje cooperativo en la comprensión lectora de estudiantes universitarios de inglés como lengua extranjera (EFL), centrándose en dos métodos estructurados: Numbered Heads Together (NHT) y Student Teams-Achievement Divisions (STAD). Se llevó a cabo con 120 participantes divididos en tres grupos: un grupo de control que recibió instrucción tradicional y dos grupos experimentales que implementaron NHT y STAD, respectivamente. La investigación explora el impacto de estas estrategias en la comprensión lectora. Los resultados demuestran mejoras significativas en la comprensión lectora entre los estudiantes expuestos al aprendizaje cooperativo. Tanto NHT como STAD resultaron efectivos para fomentar una mayor participación activa, una comprensión más profunda de los textos y habilidades colaborativas. El análisis estadístico (ANOVA) reveló diferencias significativas entre los grupos experimentales y el grupo de control. Entre las técnicas cooperativas, STAD mostró un valor F más alto (5.429) en comparación con NHT (4.167), lo que sugiere mayor consistencia y diferenciación en el rendimiento de los subgrupos. Los hallazgos destacan el potencial de la lectura cooperativa para transformar la educación del inglés como lengua extranjera (EFL) al promover un enfoque inclusivo y centrado en el estudiante. Esta investigación contribuye a la creciente evidencia que respalda las estrategias de aprendizaje cooperativo como herramientas efectivas para mejorar la comprensión lectora.

Palabras Clave: Comprensión lectora; Lectura cooperativa; NHT; STAD.

Abstract

This study investigates the effects of cooperative learning techniques on the reading comprehension of university EFL students, focusing on two structured methods: Numbered Heads Together (NHT) and Student Teams-Achievement Divisions (STAD). It was conducted with 120 participants divided into three groups—a control group receiving traditional instruction, and two experimental groups implementing NHT and STAD, respectively—the research explores the impact of these strategies on comprehension and engagement. The results demonstrate significant improvements in reading comprehension among students exposed to cooperative learning. Both NHT and STAD proved effective improvement in active engagement, deeper understanding of texts, and collaborative skills. The statistical analysis (ANOVA) demonstrated significant differences between the experimental groups and the control group. Among the cooperative techniques, STAD

exhibited a higher F-value (5.429) compared to NHT (4.167), suggesting greater consistency and differentiation in subgroup performance. The findings make visible the potential of cooperative reading to transform EFL education by promoting a student-centered, inclusive approach. This research contributes to the growing evidence supporting cooperative learning strategies as effective tools for enhancing reading comprehension and engagement.

Keywords: Cooperative reading; NHT; reading comprehension; STAD.

Resumo

Este estudo investiga os efeitos das técnicas de aprendizagem cooperativa na compreensão da leitura de estudantes universitários de inglês como língua estrangeira (EFL), com foco em dois métodos estruturados: Numbered Heads Together (NHT) e Student Teams-Achievement Divisions (STAD). Foi conduzida com 120 participantes divididos em três grupos — um grupo de controlo a receber instrução tradicional e dois grupos experimentais a implementar o NHT e o STAD, respetivamente — a investigação explora o impacto destas estratégias na compreensão e no envolvimento. Os resultados demonstram melhorias significativas na compreensão da leitura entre os alunos expostos à aprendizagem cooperativa. Tanto o NHT como o STAD provaram uma melhoria efetiva no envolvimento ativo, compreensão mais profunda de textos e competências colaborativas. A análise estatística (ANOVA) demonstrou diferenças significativas entre os grupos experimentais e o grupo de controlo. Entre as técnicas cooperativas, o STAD exibiu um valor de F mais elevado (5,429) em comparação com o NHT (4,167), sugerindo uma maior consistência e diferenciação no desempenho dos subgrupos. As descobertas tornam visível o potencial da leitura cooperativa para transformar o ensino do inglês como língua estrangeira, promovendo uma abordagem inclusiva e centrada no aluno. Esta investigação contribui para a crescente evidência que apoia as estratégias de aprendizagem cooperativa como ferramentas eficazes para melhorar a compreensão e o envolvimento na leitura.

Palavras-chave: Leitura cooperativa; NHT; compreensão da leitura; STAD.

INTRODUCTION

Regarding education, reading can be considered its basis since it serves as a gateway to developing knowledge and critical thinking. This skill facilitates the acquisition of information and promotes the improvement of cognition, linguistic competencies, and even social skills, which are essential

for personal and professional development (Duke et al.., 2021). However, reading and comprehending texts effectively can be challenging for many students, mainly those learning English as a foreign language (EFL). In this aspect, traditional teaching methods, which often rely on individual work and teacher-centered instruction, have not demonstrated significant success in addressing the different needs of students in reading comprehension (Rugel et al., 2024).

Based on constructivist and sociocultural theories, cooperative learning emphasizes collaborative efforts to achieve common learning goals; contrary to traditional methods that isolate learners, cooperative strategies encourage peer interaction, mutual support, and collective problem solutions. This situation appears due to emphasizing interaction and collaboration as key learning components. Regarding this point, Vygotsky's sociocultural theory underscores the role of social interaction in cognitive development, claiming that students learn best when they engage with peers and teachers within their Zone of Proximal Development (ZPD). Therefore, cooperative reading strategies align with this framework by providing structured opportunities for students to collaborate, share knowledge, and scaffold each other's learning. Additionally, constructivist theories promote active, student-centered learning experiences encouraging exploration, discussion, and critical thinking (Khadidja, 2020).

Hence, cooperative reading techniques embody these principles by shifting the focus from passive reception of information to active engagement with texts; throughout group discussions, role assignments, and collaborative problem-solving, students are encouraged to construct meaning, clarify misunderstandings, and deepen their comprehension of reading materials. The cooperative learning methods improve academic outcomes and foster social skills such as teamwork, communication, and empathy. In this context, cooperative learning models, particularly techniques like Numbered Heads Together (NHT) and the Student Teams-Achievement Divisions (STAD), are remarkable strategies to enhance reading skills and promote engagement among learners. Hence, using cooperative learning in reading instruction has demonstrated significant potential in issues related to lack of interest in reading, limited participation, and poor comprehension skills. (Suharli et al., 2024).

As mentioned before, one of the most effective tecniques of cooperative reading is the use of structured one like Numbered Heads Together (NHT) and Student Teams-Achievement Divisions (STAD); both methods provide important information related to how to organize group activities, ensure individual accountability, and promote equal participation. Regarding Numbered Heads

Together (NHT), it is observed as a cooperative learning strategy designed to engage all students in the learning process. It rests on dividing the class into small, heterogeneous groups, assigning each student a number, and presenting questions related to the reading material. After that, students discuss the questions collaboratively, ensuring all group members understand the material before one representative is randomly selected to share the answer. This technique promotes both reinforces individual accountability and encourages teamwork and communication. According to Mahmudah et al. (2022), Numbered Heads Together (NHT) is particularly effective in improving reading comprehension, allowing students to explore different perspectives, clarify doubts, and build confidence in their understanding of texts.

Likewise, the cooperative reading technique named Student Teams-Achievement Divisions (STAD) is another cooperative learning method that integrates team collaboration with individual assessment. In this approach, students are grouped into teams and assigned specific roles to complete reading tasks. Each member contributes to the group's success by mastering their portion of the material and assisting peers. Individual quizzes and team scores are used to track progress and recognize achievements, fostering a sense of shared responsibility and motivation. According to Adi et al. (2024), this approach has demonstrated that it enhances reading comprehension, vocabulary acquisition, critical thinking, and overall academic performance.

The use of these techniques has demonstrated important benefits for students and educators. Chen et al. (2020) argued that cooperative reading improved reading Comprehension mainly because it enables students to engage actively with texts, discuss interpretations, and resolve ambiguities through peer interaction. In this context, students can tackle complex passages more effectively than they can be able to do individually, leading to a deeper and more profound understanding of the text. Furthermore, Mahmudah, et al., (2022) claimed that cooperative reading enhances students' engagement and motivation since this technique takes learners far from Traditional reading instruction, which tended to be monotonous, and teacher-centered, cooperative reading changes the classroom into an interactive space where students are encouraged to participate, contribute, and take part of their learning actively.

On the other hand, cooperative reading promotes the development of social and interpersonal skills through working in diverse groups; students learn to value different perspectives, negotiate solutions, and build positive relationships with peers. These skills are not only valuable for academic success but also for personal and professional growth (Segundo Marcos, et al., 2020).

Moreover, cooperative reading helps to develop students' self-confidence and self-esteem by creating a supportive environment where students can seek help, share their strengths, and celebrate collective achievements; for that reason, as they experience success in reading tasks, their confidence and motivation to learn to grow (Sadeghi, et al., 2020).

Finally, cooperative reading strategies allow teachers to promote learning in diverse learning needs and styles, making them effective in inclusive classrooms. Techniques like Numbered Heads Together (NHT) ensure that all students, regardless of their proficiency levels, have equal opportunities to participate and contribute. This inclusivity promotes a sense of belonging and equity, enabling every student to shine (Almumen, et al., 2023).

Based on the gathered information, this study aims to identify the benefits of cooperative reading in students from tertiary education in public education universities, hence, the following research questions have been considered

1. Does cooperative reading significantly impact reading comprehension in university EFL students?
2. Is there a difference related to the type of approach used?
3. What are the main effects of cooperative reading in developing reading skills?

METHODOLOGY

Considering the research questions, the study is conducted through mixed method methodology. According to Hernandez-Sampieri (2018), this methodology refers to a research approach that combines both qualitative and quantitative methods within a single study to provide a more comprehensive understanding of the research problem.

The participants are a sample of 120 university EFL students aged 18-24 with an intermediate level of English proficiency based on a standardized placement test. The participants were divided into three equal groups: a control Group with 40 participants, who received traditional teacher-centered instruction. Experimental Group A, with 40 participants, received cooperative reading using numbered heads together (NHT) technique, and experimental Group B, with 40 participants, received cooperative reading using student teams-achievement division (STAD).

Additionally, the study was conducted in a period of 45 days, consisting of three weekly sessions of 90 minutes each. This results in a total of 18 sessions per group. Also, the students will be

evaluated using the same type of text and comprehension questions to determine the most effective procedure to promote comprehension in reading activities. The results are compared with those of the control group and among the cooperative reading techniques selected for this study, and an ANOVA analyzes differences across the three groups to determine the most successful one. Moreover, participants answer a questionnaire in which they share their thoughts on the cooperative reading methods.

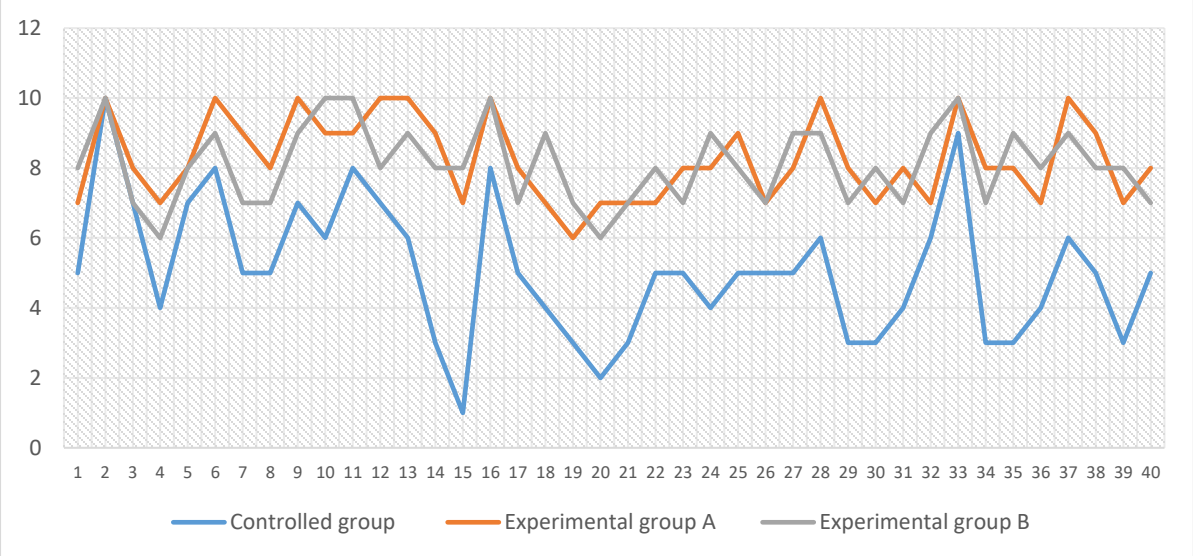
Regarding ethical considerations, all participants signed an informed consent form that explained all the procedures in detail. Moreover, anonymity and confidentiality were ensured when handling and reporting data. Hence, the participants had the right to withdraw from the study whenever they wanted.

RESULTS

Based on the test results, students involved in cooperative reading present essential outcomes in their capability of reading comprehension, cooperative reading techniques, Numbered head together, and Student team achievements division, which offer transcendental effects on the learner's ability to comprehend text (see figure 1).

Figure 1.

Results of the reading comprehension tests applied to the participants



Pol. Con. (Edición núm. 107) Vol. 10, No 6, Junio 2025, pp. 2329-2341, ISSN: 2550 - 682X

Note. Experimental group a = cooperative reading using the numbered heads together (NHT) technique, and experimental group b=cooperative reading using student teams-achievement division (STAD).

Regarding the analysis between the three groups, table 1 presents the results of the ANOVA analysis. Group A used cooperative reading using the Number Heads Together (NHT) technique. According to the statistical analysis, two hypotheses were identified. H_0 (Null Hypothesis) indicates no significant differences among the means of the 10 subgroups in Experimental Group A, while H_a (Alternative Hypothesis) states that at least one subgroup has a significantly different mean.

Also, the F-Value (4.167) compares variability between groups with variability within groups. A higher F-value indicates more significant variability between groups compared to within-group variability. Finally, since Significance ($p = 0.001$) the Null hypothesis (H_0) is rejected. This means there are significant differences among the means of the subgroups in Experimental Group A. Hence, Applying the numbered heads together (NHT) technique generates substantial differences in the performance of the subgroups.

Group B, these students were involved in cooperative reading with the Student Teams-Achievement Division (STAD) Technique. Hence, two hypotheses were identified. The Null hypothesis (H_0) indicates that there are no significant differences among the means of the 10 subgroups in Experimental Group B, but the Alternative hypothesis (H_a) argues that at least one subgroup has a significantly different mean. Moreover, the F-Value (5.429) indicates even more significant variability between subgroups than within-group variability.

Moreover, the significance ($p = 0.000$) leads to the rejection of the null hypothesis, concluding that there are significant differences among the means of the subgroups in experimental group B. Hence, applying cooperative reading with student teams-achievement division (STAD) generates substantial differences in subgroup performance. The higher F-value suggests group variability is even more pronounced than Method A numbered heads together (NHT) technique

Pol. Con. (Edición núm. 107) Vol. 10, No 6, Junio 2025, pp. 2329-2341, ISSN: 2550 - 682X

Table 1.

ANOVA analysis from the test results in the cooperative reading techniques used in the study

		Sum Squares	df of(degrees of freedom)	Mean Square	F	Sig.
Experimental Group A	Between Groups	30,833	9	3,426	4,167	,001
	Within Groups	24,667	30	,822		
	Total	55,500	39			
Experimental Group B	Between Groups	30,731	9	3,415	5,429	,000
	Within Groups	18,869	30	,629		
	Total	49,600	39			

Note. Experimental group a = cooperative reading using the numbered heads together (NHT) technique, and experimental group b=cooperative reading using student teams-achievement division (STAD).

Once have been demonstrated that cooperative reading is much better than traditional reading, it is necessary to determine which techniques seem to be more useful in the context of university EFL learners. Contrast both cooperative reading techniques, such as the numbered heads together (NHT) technique and student teams achievement division (STAD), about group variability Group B has a higher F-value, 5.429 in comparison to 4.167 in group A, indicating that between-group variability is more prominent with student teams achievement division (STAD) technique. In relation to significance, both techniques demonstrated significant differences among groups, especially in contrast with the controlled group NHT=0,001<p<0.05 y STAD=0,000<p<0.05). Additionally, the mean square within groups (0.629 for STDA vs. 0.822 for SHT) indicates that the Student team achievement division (STAD) has less internal variability, indicating greater consistency in subgroup results.

Therefore, the Numbered heads together (NHT) technique and student teams-achievement division (STAD) significantly impact the subgroups in the experiment. However, the student teams-achievement division (STAD) seems to generate more significant differentiation between the

groups with less internal variability. This suggests that this technique may improve performance more effectively or consistently.

DISCUSSION

Studies conducted by Pochana et al. (2021) identified significant improvement in reading comprehension when using cooperative reading, Based on their study, they could conclude that besides being effective in reading comprehension, it also promotes positive attitudes toward learning and collaboration while encouraging learners's active participation and responsibility.

Aslan-Berzener, et al., (2021) explored the effects of the Student Team-Achievements Division (STDA) method of cooperative learning in reading comprehension; they found critical positive aspects of this cooperative technique concluding that it is more effective than traditional methods in enhancing reading comprehension in EFL context. Also, it promotes a collaborative environment, increase motivation, confidence and academic success.

Moreover, Hanik-Mahmudah et al., (2022) evaluate the impact of the Numbered Heads Together (NHT) cooperative learning strategy on enhancing reading comprehension and engagement, this study demonstrated that the use of the NHT technique emhamced significantly eighth-grade students' reading comprehension and engagement. Through structured group discussions and collaborative problem-solving, students not only improved their academic performance but also developed a more positive attitude toward reading.

Based on the finding, they have shown the effectiveness of cooperative techniques various educational contexts, hence, integrating cooperative strategies into reading instruction, teachers can create learning environments that are engaging, inclusive, and improve academic excellence.

CONCLUSION

The impact of cooperative reading techniques on improving reading comprehension among university EFL learners results important currently, hence through the use of structured cooperative techniques such as Numbered Heads Together (NHT) and Student Teams-Achievement Divisions (STAD), students demonstrated significant improvements in their ability to engage in reading while comprehend the text materials. These techniques provided an interactive, collaborative environment that promote both academic growth and essential interpersonal skills such as teamwork. When comparing with traditional teacher-centered instruction, cooperative reading

changes the focus to a more active students' participation, resulting in deeper engagement and more meaningful learning experiences.

Additionally, the study showed some strengths in both cooperative reading techniques. NHT encouraged common participation by ensuring every student had a role, thus reinforcing accountability and confidence. Meanwhile, STAD fostered a sense of collective responsibility through team-based tasks and performance tracking, motivating students to support each other's and work towards shared goals. Both techniques proved effective in addressing common challenges faced by EFL learners, such as lack of interest, limited vocabulary, and difficulty understanding complex texts. However, the higher consistency and differentiation observed with STAD indicates that it may offer a slight advantage in enhancing overall group performance.

Therefore, cooperative reading strategies present a valuable alternative to traditional approaches, offering a dynamic and inclusive framework for teaching reading comprehension. By integrating these methods into the curriculum, educators can create engaging learning environments that assist diversity in learner's needs and prepare learners with the skills required for professional success.

References

Adi, m. T., & odula, a. E. . (2024). Impact of student teams achievement divisions strategy on senior school students' interest and achievement in reading comprehension in Makurdi area of Benue state. Nigerian journal of literacy and English education, 2(2), 102-115. Https://doi.org/10.60787/nijolee.vol2no2.42

Almumen, H. A., Raimondi, S. L., & Maheady, L. J. (2023). The effects of numbered heads together with and without incentives on the ESL quiz performance of second-grade students in a Kuwaiti inclusive classroom. International Journal of Inclusive Education, 1-22.

Aslan Berzener, Ü., & Deneme, S. (2021). The Effect of Cooperative Learning on EFL Learners' Success of Reading Comprehension: An Experimental Study Implementing Slavin's STAD Method. Turkish Online Journal of Educational Technology-TOJET, 20(4), 90-100.

Chen, C. M., Li, M. C., & Chen, T. C. (2020). A web-based collaborative reading annotation system with gamification mechanisms to improve reading performance. Computers & education, 144, 103697. Doi. https://doi.org/10.1016/j.compedu.2019.103697

Duke, N. K., & Cartwright, K. B. (2021). The science of reading progresses: Communicating advances beyond the simple view of reading. Reading Research Quarterly, 56, S25-S44. Doi. https://doi.org/10.1002/rrq.411

Hernández-Sampieri, R., & Mendoza, C. (2018). Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta.

Khadidja, K. (2020). Constructivist theories of Piaget and Vygotsky: Implications for pedagogical practices.

Mahmudah, Hanik and Rasyid, Fathor (2022) Engaging Students in Cooperative Learning Model of Reading Course through Numbered Head Together. ETERNAL (English Teaching Journal), 13 (1). pp. 53-67. ISSN ISSN: 2086-5473 (Print); ISSN: 2614-1639

Mahmudah, Hanik and Rasyid, Fathor (2022) Engaging Students in Cooperative Learning Model of Reading Course through Numbered Head Together. ETERNAL (English Teaching Journal), 13 (1). pp. 53-67. ISSN ISSN: 2086-5473 (Print); ISSN: 2614-1639 (Online)

Pochana, T., & Sukying, A. (2021). The Effects of Cooperative Learning Techniques on Thai Secondary School Students' Reading Comprehension (Doctoral dissertation, Mahasarakham University).

Rugel, L. B., Velastegui, J. P., Toledo, C. M., & Arana, M. G. (2024). EFL Teachers' Perceptions of the Use of Science Fiction to Teach Reading & Writing. 593 Digital Publisher CEIT, 9(3), 1189-1199.

Sadeghi, E., & Ganji, M. (2020). The effects of cooperative learning on Iranian university students' class-engagement, self-esteem, and self-confidence. Journal of Modern Research in English Language Studies, 7(4), 89-109.

Segundo Marcos, R. I., López Fernández, V., Daza González, M., & Phillips-Silver, J. (2020). Promoting children's creative thinking through reading and writing in a cooperative learning classroom. Thinking Skills and Creativity, 36, 100663. Doi. https://doi.org/10.1016/j.tsc.2020.100663

Suharli, S., Kusmawan, U., & Sudirman, S. (2024). Critical review: the effectiveness of student teams-achievement divisions vs numbered heads together cooperative learning in improving students' mathematical critical thinking abilities. Gema Wiralodra, 15(1), 606-614.

.