

# Cooperative Learning to Foster Reading Skills<sup>1</sup>

Aprendizaje Cooperativo por Proyectos para Mejorar las Habilidades de Lectura

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## Abstract

This paper reports an action research study on cooperative learning projects for engineering students at a public university. The research study is aimed at improving reading skills through the use of four cooperative learning projects implemented during the English classes. Data gathered from a survey, four group interviews, and the teacher's journal were collected and analyzed to determine the categories after coding the data. Findings suggest that working cooperatively has a higher effect on students' reading skills. Conclusions also highlight that cooperative learning strengthens English reading skills and fosters leadership, decision making, communication and problem-solving abilities. Additionally, it increases participation, motivation and goal achievement in students' language learning process.

**Keywords:** cooperative learning; collaboration; interaction; reading skills; reading strategies; English learning, communication

## Resumen

Este documento da a conocer un estudio de investigación acción sobre el aprendizaje cooperativo por proyectos para estudiantes de ingeniería de una universidad pública. El estudio tiene como objetivo mejorar las habilidades de lectura mediante el uso de cuatro proyectos de aprendizaje cooperativo implementados durante las clases de inglés. Se recogieron y analizaron los datos de una encuesta, las entrevistas de un grupo y el diario del profesor para determinar las categorías después de codificar los datos. Los resultados sugieren que el trabajo cooperativo tiene un mayor efecto en las habilidades de lectura de los estudiantes. Así mismo, las conclusiones resaltan que el aprendizaje cooperativo fortalece las habilidades de lectura en inglés y fomenta el liderazgo, la toma de decisiones, la comunicación y la capacidad de resolución de problemas. Además, aumenta la participación, la motivación y el logro de objetivos en el proceso de aprendizaje del idioma de los estudiantes.

**Palabras clave:** aprendizaje cooperativo; interacción; habilidades de lectura; estrategias de lectura; aprendizaje de inglés; comunicación

## Resumo

Este artigo reporta uma pesquisa ação sobre a aprendizagem cooperativa por projetos para estudantes de engenharia de uma universidade pública. O estudo pretendia melhorar as habilidades de leitura através da implementação de quatro projetos cooperativos implementados durante as aulas de inglês. Uma pesquisa de opinião, entrevista grupal e a análise documental foram utilizadas como instrumentos de pesquisa. Os resultados sugerem que os estudantes melhoraram significativamente as suas habilidades de leitura trabalhando cooperativamente. Da mesma forma, as conclusões ressaltam que a aprendizagem cooperativa melhora as habilidades como liderança, tomada de decisões, a comunicação e a solução de problemas. Adicionalmente melhora a participação motivação e realização de objetivos no seu processo de aprendizagem do idioma inglês.

*Palavras chave:* aprendizagem cooperativa; colaboração; interação; habilidades de leitura; estratégias de leitura

## Introduction

Enhancing reading skills when teaching English is a challenging task in Colombian education where students read lots of specific information related to their major studies. Engineering students need English as means of efficient communication not only for their jobs but also to connect with a world where the English language is one of the official languages of the science community. Therefore, there is a need to provide students with opportunities to use the language and to have a more active participation inside the classroom. Developing reading skills is a complex process considering that students should understand what they are reading, and apply that information on their area of knowledge. According to Maria (2009) “For engineers, English is primarily a library language meaning that the student must understand enough to gain access to knowledge contained in textbooks and particularly in periodicals and journals in order to extract information and keep abreast with latest technologies” (p. 45). It means that there is a constant need for effective reading skills across the curriculum which will contribute not only to foster reading but also to improve the engineering education by exposing learners to authentic knowledge and real situations.

Considering the relevance of improving students’ reading proficiency in this public university, this research study discusses the effectiveness of cooperative learning projects to foster reading skills of a group of students. The university adopts a communicative approach however, it is blended with other teaching methods which depend on the teacher’s perspective. Students have to take six mandatory English language levels which do not affect students’ grade-point averages (GPA) since English is not part of every program curriculum. The fact that English is a mandatory subject has led students to become passive learners who do not regularly attend to English classes, students just come when a test is administered, and according to SABER PRO (2018) testing most of the students’ English level is A2. Despite this situation, students are aware of their need to improve the English level because in the content subjects they are required to read texts in English with specific technical language not seen before in the English classes, in order to keep updated with the different processes, tendencies and technologies in Engineering and industrialized countries.

In this way cooperative learning projects were chosen as a new strategy for them because of their multiple benefits, methods and strategies to use in the classroom, students have different learning styles and that is why they may have different strengths, some of them might be good at grammar or some others might be fluent or feel confident talking in public, this is why students can support each other with their strengths in cooperative activities that help them learn and improve their abilities not only in terms of language proficiency but also in terms of personal skills like teamwork or problem-solving. In this way, a motivation emerged to contribute with strategies to foster students’ reading skills as they need to become effective and efficient learners on

their engineering programs since English is required to acquire knowledge and learn new information, bearing also in mind that the six levels are necessary to graduate.

The proposed question for this research study is stated as: What is the impact of implementing reading skills in cooperative learning projects on undergraduate engineering students in a public university? and the main objective which guided this research study was: To foster reading skills on undergraduate engineering students at a public university through cooperative learning projects.

## Theoretical Framework

### Cooperative learning

According to Johnson and Johnson (as cited in Johnson & Johnson (2018) “Cooperation is working together to accomplish shared goals. When cooperating, individuals work to achieve outcomes that benefit themselves and all other group members. Cooperative learning exists when small groups of students work to enhance their own and their group mates’ learning (p. 62). For the purpose of this research study cooperative learning is seen as an active process where students take an active part in their learning development cooperating together to accomplish their learning goals and acquire new knowledge according to their interests, needs and skills.

Consequently to accomplish the main objective of this research study, cooperative learning projects were chosen considering that each member of a group has a talent or special ability in order to achieve a common goal and support each other on a group work as Gillies (2016) stated “Helping students to interact and work together not only enables students to learn from each other but also to accept responsibility for the tasks they have to complete and the decisions they have to make” (p 44).

Accordingly, in order to answer the question that guided this research study five essential components of cooperative learning described by different authors were implemented to support students’ learning and improve their reading skills while using cooperative strategies inside the classroom.

Face to face interaction: “Teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject” (Wichadee, 2005, p.23).

Positive interdependence: Possibilities students have to promote individual learning through cooperation among others, e.g “Positive goal interdependence (mutual goals), positive reward interdependence (joint rewards), resource interdependence (each group member has different resources that must be combined to complete the

assignment), and role interdependence (each group member is assigned a specific role)” (Johnson, D. W., Johnson, & Stanne, 2000, p.5)

**Accountability:**each member of the group has a task to do so they are able to report results and the group can identify who needs more support or guidance. “Each member of a team is responsible not only for learning what is being taught, but also for helping teammates learn, thus creating an atmosphere of achievement” (Suwantarathip & Wichadee, 2010, p.51).

**Equal participation:** Allows students to become active members of the group, every student has the chance to do a task, assess it and receive feedback. Team work appears as an inclusive alternative to foster reading skills. “Cooperative Learning gives the learners a chance to put the language to use” (Gurk& Mall-Amiri, 2016, p.41).

**Group interaction:** Group members must promote each other’s learning and success face-to-face, hold each other personally and individually accountable to do a fair share of the work, use the interpersonal and small group skills needed for cooperative efforts to be successful, and process as a group how effectively members are working together”(Wichadee & Orawiwatnakul, 2012, p.93).

## Reading strategies

The use of reading strategies in this research study resides in the need of students to improve their reading skills. These strategies were implemented as steps during the development of each of the projects starting by predicting, then making connections, passing to the inference step, later questioning and finally summarizing, they were chosen to help students not only to read texts, but also to interpret diagrams, figures, tables, find main objectives, question the functionality of some devices, summarize and make conclusions of specific content.

There are different views of the use of reading strategies depending on the context and the population. Barnett (2002, p. 14) defines a reading strategy as the understanding processes that a person carries out when reading as a means to comprehend what they read. In this process the teachers’ role is essential to make reading strategies useful for students, it is required a clear, guiding and scaffolding orientation, which lets achieve the understanding process when reading. The reading strategies implemented are:

**Predicting.** The first step to become an effective reader is setting a purpose for reading and depending on it, looking for details becomes vital to acquire knowledge. “Some of the approaches for teaching predicting are teacher modeling, predicting throughout the text; with partners, with a graphic organizer, or using post-it notes throughout the text. Using the title, table of contents, pictures, and key words is one prediction strategy”. (Küçüköğlü, 2013, p. 710). When implementing these strategies

the brain prepares for the reading process activating previous knowledge to be ready for the text.

**Making connections.** This second step is very essential because it is at this stage where students connect what they read to what they already know. Effective readers always make connections to the purpose of their reading and with the academic context they are involved. According to McNamara (2012) “Good readers attempt to bridge incoming sentences with previous text content and with their background knowledge” (p. 14). When readers process a text in a deep way, such as answering WH questions they would start building a meaning which is seen as a comprehension and reflection process.

**Inferring** means reading through lines. Effective reading requires making a prediction, learners use their background knowledge to infer what is coming up in the text. “If readers could decode the words on a page, they would be able to monitor what was being read to themselves orally and understand what they were reading” (Serafini, 2004, p. 200). This step allows learners to have a more complex process of reading, it requires students to predict, make connections to finally draw their own conclusions.

**Questioning.** This step can be used before, during or after reading. Its purpose is to guide students to find answers, solve a problem or find out new information. “Question-answering instruction encourages students to learn to answer questions better and, therefore, to learn more as they read” (Adler, 2001, p.43). It also implies learners to make use of all the previous reading strategies mentioned, to achieve an enriching understanding process of the text.

**Summarizing.** During the summarizing step readers should select and highlight the most relevant information or details of the text read. “The interpretation of the information in the text, the use of prior knowledge to interpret this information and, ultimately, the construction of a coherent representation or picture in the reader’s mind of what the text is about” (McNamara, 2012, p.27).

## Methodological Design

**Type of research.** Based on the main objective of this research “To foster reading skills on undergraduate engineering students at a public university through cooperative learning projects”, this work is framed under a practical action research in which according to Creswell (2012) “Teachers seek to research problems in their own classrooms so that they can improve their students’ learning and their own professional performance” (p. 579).

This process of practical action research was done by following the five stages proposed by Mills 2011 (as cited in Creswell 2012) in which a non-ending process

takes place : identifying the area of focus, collecting data, analyzing and interpreting data, developing an action plan and finally implementing it to reflect again on the results and set future actions.

In the first stage of this procedure, an area of study was identified by reviewing the literature and writing the plan to conduct this research. Second, data was collected by analyzing sources such as interviews, surveys and teacher journals. The third stage focused on analyzing and interpreting data, the process included the identification of topics, coding the data collected, its categorization and the interpretation of the ideas analyzed. Based on the findings in the fourth stage an action of plan was devised; this plan concentrated on developing reading skills on the students by means of cooperative learning projects. In the last stage, this plan was implemented and results were analyzed to recommend actions.

## Participants.

This action research study was conducted with 45 university students aged between 18 to 24 years, they are part of Mining, Geological, Industrial, Electronic and Systems Engineering Programs. Students who belong to these programs have to take six mandatory English language levels which do not affect students' grade-point averages (GPA) since English is not part of the programs' curriculum. Students agreed to participate in the research study and signed a consent form before starting. Their English level is between A1-A2; they can read very short, simple texts. They can find specific information, in simple everyday material such as advertisements, brochures, menu and timetables and they can understand short simple personal letters.

## Data Collection Procedures

This research study was carried out during the first semester of 2019 in four cooperative learning projects; every project took four sessions, two hours each one. During the implementations three instruments were applied to gather data: a survey, group interviews, and the teacher's journal.

**Survey.** In order to know students' attitudes and perceptions on fostering the reading skills a diagnosis and a halfway process survey were implemented. The surveys included 11 closed and open-ended questions each; the initial survey encompassed rating-scale questions to inquiry on students' attitudes towards reading. And the second survey looked to find out students' perceptions and attitudes of the cooperative strategy and the improvement of the reading skill through 11 open-ended questions.



**Group interview.** “Interviews are particularly useful for uncovering the story behind a participant’s experiences and pursuing in-depth information around a topic” (ADJP, 2016, par. 2). A short group interview including opinion and contrast questions was carried out at the end of each project implementation to find out the student’s opinions about the incorporation of cooperative learning during the English language learning process.

**Teacher’s journal.** “In pedagogic theory the term journal started to be applied in the context of different auto- regulation and self-reflexive strategies that became an important part in the content profiling of teacher-focused study programs” (Wiegerová, 2013; p. 237). This tool was very important for this study because it allowed having different perspectives of the situation during the implementation of cooperative learning projects to foster reading skills. The focus during the collection process was on students’ behaviors and attitudes towards reading and the different cooperative learning components that emerged during group work activities.

## Pedagogical Intervention

The cooperative learning projects focused on particular cooperative learning components, previously explained in the theoretical framework, a reading text taken from engineering online magazines and the reading strategies for all projects: Predicting, making connections, inferring, questioning and summarizing.

**Description of the projects.** The projects described included the techniques proposed by authors such as: Jamaludin & Mokhtar (2018), Mubarak & Sofiana (2017), Karacop (2017) and Mitchell et al., (2008) who focus on the development of Cooperative Learning in the classroom.

**First project: Student Teams-Achievement Divisions technique (STAD).** Bearing in mind the purpose of this research study, the cooperative learning projects were framed on STAD, which was the first project; “a STAD technique on structured cooperative learning approach embrace higher instructors’ participation, teams’ rotation roles, helpful peer interaction and conducive learning environment” (Jamaludin & Mokhtar, 2018, p.576). This stage took four weeks and four-two hours sessions. In terms of cooperative learning, the rules were set, and the groups were distributed with the implementation of a multiple intelligence activity in which students with different intelligences made a group to contribute according to their abilities.

**Second project: Cooperative Integrated Reading and Composition technique (CIRC).** By using CIRC, the students were expected to have better achievement in reading based on Mubarak & Sofiana (2017, p.125) who affirm that CIRC increases

students' reading ability better than the conventional teaching strategy. Students worked in four-member cooperative learning teams, they made predictions and summarized engineering articles. They also worked together to master main ideas and other comprehension skills; they were engaged in writing drafts as well as revising and editing one another's work. Finally, students prepared a summary presentation of what they read.

**Third project: Jigsaw technique:** “brings the cooperation to the forefront by providing support to students’ working together and removing competition in the classroom” (Karacop, 2017, p. 421). Students were assigned to six-member teams to work on academic material that has been broken down into sections. Members of different teams who have studied the same sections meet in expert groups to discuss their sections. These students returned to their teams and took turns teaching their teammates about their sections. At the end, students took individual quizzes, presenting the final activity to the class, which resulted in team scores.

**Fourth project: Group Investigation technique,** this was the last project in which students were involved as it “allows students to be directly involved in how they obtain knowledge; they are not mere recipients. It is a democratic approach in a classroom setting” (Mitchell et al., 2008 p.389). Students worked in small groups using cooperative inquiry. The groups broke their subtopics into individual tasks and carried out the activities that were necessary to prepare group reports and cooperative development of the project. The students took individual quizzes, which resulted in team scores and each group then made a presentation to communicate its findings to the entire class.

These four techniques share the idea that through the incorporation of cooperative learning into the learning process students enhance team-work, leadership, communication and problem solving. In this sense, learners were involved in the development of their cooperative skills to advance in their English language learning process.

All lessons were adapted based on the cooperative learning components and the reading skills. The lesson plan format was adapted from Macpherson (2015) . This format allowed the teacher to have control of the class and to incorporate the elements of cooperative learning and reading strategies.

## Data Analysis and Results

The data collected for this research study were qualitative and the analysis technique applied was a triangulation process where the information obtained from surveys, interviews and the teacher's journal was compared to corroborate the evidence

acquired. Then, information coding was applied. “The researcher bases categories on all data collected, such as interviews, observations, and researcher’s memos or notes” (Creswell, 2012; p. 424).

During this coding analysis two core categories emerged: The first one, Effects on reading skills, pinpoints the importance of improving and implementing different strategies to foster reading skills in the English classes at the university, from this appeared two subcategories: 1. Reading strategies used by the students, 2. Students Reading skills interaction. The second core category Cooperative learning challenges, highlights the advantages of implementing cooperative learning in a context where students are not used to attending English classes and how that implementation promoted leadership, decision making, communication and problem solving; this core category derived two more subcategories: 3. Challenges of working with cooperative projects, and 4. Difficulties in working cooperatively, as it is illustrated in Table 1.

Table 1. Categorization

RESEARCH QUESTION	CORE CATEGORIES	SUBCATEGORIES
What is the impact of implementing reading skills in a cooperative learning environment on undergraduate engineering students in a public university?	Effects on the reading skills	Reading strategies
		Students reading skills interaction
	Cooperative learning challenges	Challenges of working with cooperative projects
		Difficulties in working cooperatively

The connections between core categories and subcategories through the data analysis allowed teachers researchers to represent in a better way the phenomenon of this research study and answer the research question. It can be said that students’ participation, motivation and goal achievement in their English language learning process improved thanks to the completion of cooperative learning activities, as it is explained as follows.

### Core category 1: Effects on reading skills

**Reading strategies and students’ reading skills interaction.** The principal aim of this research study was to foster reading skills through the integration of cooperative learning into the regular English classes. Then, the first aspect to be discussed is how reading skills evolved or changed during the research process. In the initial survey a 100% of the students affirmed that they did not read in English for pleasure, all of them answered that they just read because they had an assignment to develop in their content subjects. From that perspective, it was understood that the incorporation of

authentic reading material motivated students to start reading in English because they were interested in knowing what the text was about as it is noted by Duke & Pearson, (2009; p. 211) “providing experience reading real texts for real reasons and creating an environment rich in high- quality talk about text—will undoubtedly help”.

During the first group interview applied at the end of the first cooperative learning project, students asserted the importance of knowing how to implement different reading strategies as well as reading other kinds of texts. Student F said:

“In my English classes I always read articles from a book, they always talk about things that happen in other countries. During these four weeks I read about engineering topics which called my attention and I spent much time predicting what the writer tried to say... it was very interesting, and I worked with classmates from other programs, it was fun” (Researchers’ translation).

This perception from a student indicated that it was required the integration of reading strategies or techniques to explore a text in detail. It was imperative for learners not only to read a text but also to comprehend what is behind it and going beyond the words that are written; all these aspects can be achieved by the implementation of authentic material and a good use of reading strategies since “discovering the best methods and techniques or processes, the learners choose to access, is the goal of research in reading strategies” (Karbalaei, 2010, p. 165).

Participants acknowledged the advantages of discussing the way they used to work on reading activities in English classes compared with the way the reading instruction was done during the implementation of this project. These students interacted to ask each other about not only the texts in depth but especially how they approached every text. The teacher-researchers wrote in the teachers’ journal:

“Today, I noticed that students liked to discuss what the article probably would talk about just by reading the title. They started to talk about engineering requirements nowadays. Another group of students talked about the importance of predicting because it helps them to remember prior knowledge.”

## **Core category 2: Cooperative learning challenges.**

**Challenges of working with cooperative projects and difficulties in working cooperatively** these subcategories make reference to the cooperative behaviors that participants evidenced during the project implementation; it also presents the benefits, advantages and difficulties. To begin with, it is important to mention that behaviors that emerged during the incorporation of cooperative learning to foster reading skills were: communication, interaction, cooperative planning, sharing ideas, decision making, leadership and motivation. In the same way, confidence also appeared along

the project since students had to solve problems and dealt with them in a proper way, it is worthy to see how trust is built when students can see their partners' ability to figure out a solution.

Similarly, the value of the student's contribution to learning in a group was a vital element evidenced during the second group interview, one of the students said he liked working with people who wanted to win, he also noted how working together to reach a goal made him feel great when other members helped him understand the text and explained ideas when he did not understand certain vocabulary, he feels he knows a lot more now.

As it was indicated by this student, collaborative learning gave them an opportunity to socialize, they changed their attitude towards group work and positive interdependence which is a main component of cooperative learning and this was evident during the project implementation. "Positive interdependence exists when individuals perceive that they can reach their goals if and only if the other individuals with whom they are cooperatively linked also reach their goals and, therefore, promote each other's efforts to achieve the goals" (Johnson, et al., 2007; p.16), this means that showing a mutual interest of winning which indirectly implies learning and interacting is one of the most important cooperative social behaviors.

When students talked about the difficulties and challenges of improving reading through cooperative learning activities they highlighted the importance of carrying out activities that were more dynamic rather than going through a text several times, because these allowed them to feel safer and their self-confidence increased as indicated in the following excerpt:

"We felt different from the previous English classes; we felt that we are important and that we can contribute so the group can have better results. We don't have a good English level but when we read and read and re read an article and we go through it by pieces it is easy to understand and learn new words. That kind of learning made me participate in the classes and now we are not ashamed or shy to work."

Providing a confident and safe environment helped students to make better contributions to their learning process in spite of the differences among the members of the group (language level, academic major, learning styles, etc.), this is how we can see that "CL offers learners the opportunity to harness these differences in the pursuit of learning goals in an environment that shows respect for all contributions to learning and in which learners will be more inclined to value themselves and others" (Sharan, 2010; p.310).

Data also revealed that peer feedback played an important role on students' English language performance because it demonstrated that when students were

motivated to work in groups and made important efforts to success, their academic results and participation were higher. In this view, it can be noted that “opportunities for students to discuss, to argue, and to present and hear one another’s viewpoints are the critical element of cooperative learning with respect to student achievement” (Slavin, et al., 2003. p. 183)

At the last stage of the implementation of cooperative learning activities to foster reading skills, data illustrated that problem solving was the most challenging factor because students had to deal with assigning roles, accomplishing responsibilities and decision levels. One of the teacher’s journal entries said that students spent more than 15 minutes deciding roles such as who is going to be the manager, the reporter, etc. When they did not make a fast decision they started complaining and their voice tone turned loud. Likewise, during an interview a student argued that it was difficult to agree with his partners as all of them wanted to give orders, this extra time they spent discussing letting the other groups finish first.

It can be seen that this kind of interaction that represented a challenge for students was very useful because it allowed them to manage thinking and social abilities at the same time as well as reinforce the idea that the teacher or instructor must be a learning facilitator to help students to keep working effectively in groups to accomplish the tasks, such a role of facilitator can make a difference when trying to improve learners’ skills as Sangadji (2016) points out: “Teachers also play a role to help students to plan, implement the plan, and organize group, and serve as academic counselor.” (p. 98). After analyzing the core categories, it is possible to say that motivation, interpersonal and group skills, goal achievement, communication among students and teachers, and a safe learning environment provide students with security and confidence to work and learn. This improvement of social skills evidenced excellent student’s performance in class considering that when they took a final test and were exposed to different reading activities to assess their knowledge, they obtained good results.

## Discussion

Now, we can refer to the question of this research study: What is the impact of cooperative learning projects on undergraduate students reading skills in a public university?

It was demonstrated through the data collection procedures (surveys, group interviews and teacher’s journal) that collaborative learning activities and the implementation of reading strategies actually helped students to understand an article deeper and engaged students in group discussions that fostered communication with others. One of the projects that clearly illustrated this was the implementation of the second project Cooperative Integrated Reading and Composition (CIRC), students

integrated the reading strategies used in the first project, Students Teams- Achievement Division (STAD), and they started to be more aware of how their learning process was and how they selected what they read as an important component of their process to become professionals. Hence, it can be appreciated how making learners more aware of their own learning process and “teaching students to become constructively responsive readers can promote skillful academic reading, which, in turn, can enhance academic achievement” (Sheorey & Mokhtari, 2001; p.446). That is consistent with some assertions found in students’ comments in the survey and the teacher’s journal:

“Developing reading strategies during the class has helped me to understand the texts that I have to read in robotics( now I can participate because the teachers speaks English too) ; I liked analyzing titles because it helped my brain to start thinking in English”

Survey 2-St V July 2019

“Today students’ attitudes were much better. At jigsaw, they laughed ,worked together without yelling at anybody. Their faces were happy, they didn’t show any stressed when reading the magazines as in previous classes. it was evident that communication among the participants of each group has improved a lot”

Teacher`S Journal

These results highlight another benefit of group cooperation, that is, interaction became more active because students had to infer, summarize and present a whole report about the article they read. Though these projects were intended to help students implement a set of different strategies to comprehend a text it also helped to build a positive attitude to the reading activities. Student F affirmed during the third group interview that now he loved English classes because he noticed he was good at inferring and proposing questions related to the article; this allows us to see that the more motivated students are, best results can be seen during the student’s performance in class. A motivated student interacts easily with the reading texts and influences positively on their group development.

At the end of this research study the same initial survey was implemented. Results showed that 25 out of 45 students started to read in English especially magazines or articles related to their programs.10 students started to read in English other topics of interest such as literature and sociopolitical issues after being involved in the research and the last 10 students were not interested in reading in English.

In the last interview 25 students agreed that their reading proficiency improved, they said that the way they used to read changed throughout the project implementation. 10 students affirmed that after the English course skills such as

planning, organizing their academic activities improved. The other 10 students explained that they do not read in English during their free time, but enjoy reading in class because they learnt new vocabulary related to their majors and they have the teacher right away to clear up doubts. “The students who are taught reading by using reading strategies training technique have significantly higher scores of literal and inferential comprehension than those who are taught using more traditional one” (Mistar, et al., 2016; p. 53). From this perspective, it can be inferred that students became more aware of what strategies or techniques can be implemented to understand a whole text as identifying its organization, different types of texts, understanding main ideas, and the use of new vocabulary. These aspects are important to improve reading comprehension skills.

To summarize, it can be said that thanks to the implementation of the projects, the use of reading strategies increased and improved students’ reading comprehension skills. 57% of the participants strongly agreed that they were able to make associations when they did not understand a word; 43% agreed that their ability to contextualize the reading with their real context improved. Students were also able to make decisions in the way they want to improve their reading comprehension skills; student H said in the last group interview “ I am able to decide if I have to foster comprehension by making questions or by selecting main ideas which are the strategies that I now employ the most”. Motivation and confidence were also important factors because they let students have a more active participation and a positive attitude regarding the reading activities. 57% of the participants strongly agreed that after the english course they enjoyed reading technical engineering online magazines because it helps their career development so they were more confident to participate in other subjects. The other 43% established that they now enjoy reading literature and other topics.

As a final remark, it can be inferred that students enhanced their reading comprehension skills by using different reading strategies and texts they were interested in.

Students also felt that activities helped them to improve their attitude and ability to read in English and the projects were suitable to promote interaction in the class instead of the traditional use of English textbooks.

“I did not attend English classes of English before because they were boring, the activities were the same every semester, and all teachers used the same book so I asked my friends to lend their books. This course was different; dynamic I was always doing things and shared with different people too”

“I liked to have the feeling that the teacher was a classmate too, she was always sitting with us instead of writing verbs or grammar on the board as in previous courses”.



Along the implementation of the projects, students expressed their insights about cooperative learning, they showed a positive attitude toward working in teams because they received support, feedback of their learning performance and they had an active participation during the English classes as it was evidenced in the third and fourth students' interviews

“This is the first time I understand how to work in groups; everyone did what had to do. it was fun to correct my classmates without being annoyed”

Interview 3- ST- T-2019

Similarly, it is possible to say that motivation, interpersonal, group work skills, goal achievement, communication among students and teachers, and a safe learning environment provide students with security and confidence to work and learn. Those aspects led to evidence of the improvement of social skills in the group work which would result in an excellent student's performance in class. Additionally, students were able to foster their problem solving skills.

Even though results were significant to see changes during the English course , it is necessary to continue examining the effectiveness of cooperative learning and how its implementation can foster not only the reading skills but also all English language skills. Further research should look for other alternatives of cooperative learning projects to be implemented at the university level to have an important impact on the bilingualism policies of the current government.

## Conclusions

This research study has examined the impact of cooperative learning projects by mainly fostering reading skills. The study revealed that students changed the way they perceived the English subject by working in a cooperative environment that promotes confidence, communication, motivation and problem solving skills. It was evidenced that no matter what the student's English level is, the amount of vocabulary they know or their content knowledge based they have because if the students are highly motivated and the interaction in the class is active, their reading performance unquestionably rise.

Cooperative learning projects used in this research study, they fostered group work and social skills since they had the opportunity to manage the roles and activities they had to report. They took advantage of having the language teacher as a language facilitator when they did not understand or did not know how to share an idea. Moreover, students displayed confidence levels when interacting in groups and working in a safe environment.

Opportunities to improve their reading skills were also evident when they were exposed to authentic material related to their majors. Motivation here was crucial to have an active reading participation along the project, in this way the most motivated students got the most significant academic results.

Cooperative learning implementation has positive effects on students' English language performance in class and it was evidenced with the results of the final tests students took and also with the activities done in class. They shared their ideas without feeling ashamed about making mistakes. Student's perceptions and confidence to interact in the English language were enhanced. Results emerged from this research study have a great significance in the teaching context and the value of implementing cooperative learning into all the English language levels that offer the university because students can transform their passive role to an active and responsible role of their own learning process and improve goal achievement and autonomy.

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