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# **BRAIN GYMNASTICS AS PEDAGOGICAL MEDIATION TO IMPROVE THE READING ALOUD OF A CLASS OF SECOND GRADE STUDENTS AT “LA CUMBRE” TECHNICAL INSTITUTE**

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## **Abstract**

The present research is framed within the qualitative paradigm, which is characterized by studying the reality of a class of 28 second-grade students at “La Cumbre” Technical Institute in the municipality of Floridablanca (Santander) where, through action-research, an active role is assumed to improve reading aloud.

The general objective is to strengthen the processes of reading aloud from seven pedagogical workshops based on brain gymnastics exercises focused on improving fluency, pronunciation, intonation and voice volume. It includes participatory observation, evaluation rubrics, audiovisual records and a field diary.

As a result, it can be seen that, in order to strengthen the processes of reading aloud, it is important to create spaces in the classroom where orality is stimulated, respect is encouraged and a listening attitude is developed. In addition, it is recognized that the act of reading aloud should be considered as an opportunity to lead children to change their learning and improve academic difficulties, where an integral connection between body communication and language is developed. One of the main conclusions is that, within language learning, it is

ideal that teachers and students understand that learning to read aloud is a process. In other words, it is essential to go step by step and to take into account the different skills involved in reading in public.

Finally, the study shows a positive response from the implementation of brain gymnastics, since children enhance their communication skills and strengthen intra-personal and interpersonal relationships. Likewise, it allows the teacher to provide constant accompaniment, associated with reflection, flexibility, respect and empathy, recognizing that mistakes can be made and that these errors must be solved calmly, in order to improve the processes in terms of intonation, fluency, voice volume and pronunciation, since it is not only about reading aloud, but also about teaching children to read aloud.

**Keywords:** reading aloud, brain gymnastics, pronunciation, intonation, voice volume, fluency, mind and body, pedagogical workshops.

## **Introduction**

The research is developed from the participative observation and implementation of the initial diagnosis, in which, some children's stories are selected for students to read aloud, with the objective of knowing their reading ability. From this activity it was possible to record in the field journal the problems that some children have when breaking down words causing constant pauses and syllables. In relation to the above, Soriano (2014) alludes that reading learning disorders are mainly characterized by a failure in the recognition of words, appearing in the inability to develop fluent reading.

Thus, a divided reading was evidenced including lack of fluency, pronunciation, voice volume and intonation where the students show difficulties in two linguistic skills: reading and listening. (MEN,2016)

Also, it was observed in the video recordings that many of the students were sitting badly, talking and causing noise. To this, Avila (2017) refers that, if students do not opt for an ethical posture with their attitude when listening, all the work in the classroom is useless for educational purposes.

On the other hand, some children showed stress, nervousness, tension and insecurity when reading aloud. Diaz and Gomez (2007) define school stress as "the discomfort that the student has due to physical, emotional, either inter-relational or intra-relational, or environmental factors that can exert a significant pressure on the individual's competence to face the school context" (p.14).

In summary, students' attitude when reading aloud is a problem since they do not respect shifts, talk, stand up, walk around the room, make annoying noises with their school supplies, and sit poorly. Therefore, the implementation of brain gymnastics is justified to improve these difficulties.

Brain gymnastics is a set of coordinated and combined exercises that prepare the body to receive knowledge. In addition, they encourage and accelerate learning, keep the body

balanced to better express ideas, help control stress, contribute to body and mind health, strengthen active thinking and ensure success in the learning process.

According to Ibarra (2007), "brain gymnastics prepares the brain to receive what it wishes to receive, that is to say, it creates the conditions for learning to be carried out integrally and profoundly" (p.10). Brain gymnastics, neurolinguistic programming (NLP) and the postulates of Paul Denison and Gail Denison (1986) conformed the design of the exercises, with the objective of helping the students with learning, memory and attention difficulties and incorporating simple body movements to link the nervous networks in the development of the brain capacities.

On the other hand, Brain gymnastics stimulates the dimensions of child development from the socio-affective, corporal, cognitive and communicative aspects in the child's growth in relation to the actions of laterality, coordination, attention and breathing in the practice of these exercises; these are: count up to ten, four exercises for the eyes, crossed crawling, energetic yawn, Peter Pan and attention exercises N°1 and N°2.

In short, in this project brain gymnastics is considered as a pedagogical strategy that intends to generate corporal conscience in the act of controlling emotions and feelings when one is a reader or listener, also to identify prosodic and phonological elements and to teach reading by means of processes, follow-ups and accompaniments.

Therefore, this project improves students' reading aloud through brain gymnastics, promotes reading habits and allows the development of basic skills, favoring other school learning such as linguistic communication, mathematical competence or scientific competence Gil (2011). Thus, this research relates theory and practice, considering the greatest number of opportunities to foster skills and abilities through the body movements of brain gymnastics.

Based on the previous information, the following section describes the main cognitive theories with the aim of supporting the study. In this way, it takes into account the theory of significant learning that proposes an appropriate framework for the development of educational work based on students' previous cognitive structure, which should be related to the new knowledge acquired through significant experiences (Ausubel, 1983).

Solé (2012) considers that "teaching should emphasize knowledge and competent use of the rules of correspondence between signs and spelling, being essential to access texts and meaning" (p.307). From the above we can deduce that the teaching of language in the classroom must be a new way of using communication, of having spaces for the development of orality within the social world.

In fact, teaching reading aloud should be thought of as a positive experience that enriches assertive communication and allows for affective expression in the act of respecting the other when reading or listening. In this regard, Zambrano (2018) extols reading aloud as a socialization experience for the development of communication skills that allows for greater personal and intellectual growth. Furthermore, in the act of listening, students favor and activate the senses to discover the world of literature considering the rhythm, pronunciation, intonation and fluency of the text.

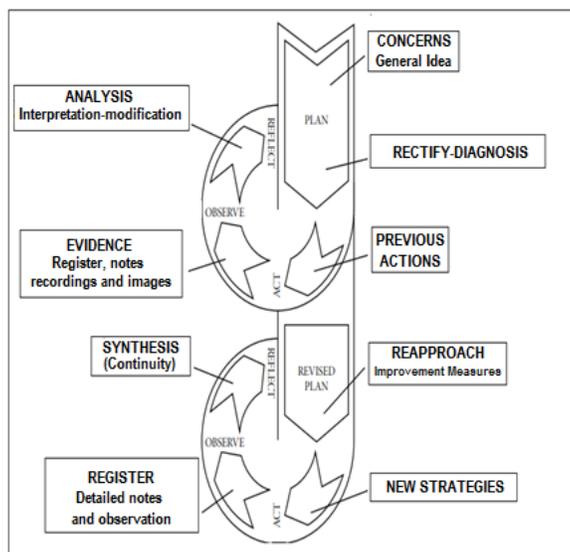
It is important to clarify that the teacher's mediation must allow students to build reading competence and become interested in reading aloud. One way to strengthen it is the inclusion of daily practices linked to the enjoyment of reading, in the family and at school, in order to generate emotional ties among readers and reinforce phonological awareness in learning to read aloud (Sole, 2012).

## Methodology

This research is of a qualitative nature, which takes into account the approach to the problem, the context, the population and the objectives of the study. From the theoretical-practical process, the qualitative approach is complemented with action-research, which involves students and enables the association of practice and reflection. Begoña (1992) refers that, "The action from the participants' point of view is participatory, because all the members are part of the research directly or indirectly, and it is cooperative because they work together to further understand the problem" (p.109). In addition, it allows observing and identifying the phenomena in order to propose a flexible plan as a mediation to the problem observed.

Hernández, Fernández and Baptista (2014) describe that "the basic precept of action-research is to lead to change and therefore this must be incorporated into the research process itself" (p.497). With this understanding, action research reaffirms the learning of reading aloud, which is a rigorous, detailed, and flexible process that allows for adjustment according to students' experiences. In addition, it grants the knowledge of the context, needs, strengths, weaknesses and conflicts of the students which are fundamental for the execution of the pedagogic practice.

In accordance with the previous postulate, the research takes into account Robin McTaggart and Stephen Kemmis who complement the idea and bring to the research the plan of action. Considering the need for the study, the researcher made an adaptation of the comprehensive model by McTaggart and Cols (1982) which can be seen in the following Figure 1.



*Figure 1.* Diagram proposed by Kemmis and McTaggart (1982).  
Source: Adapted from Kemmis and McTaggart (1982)

The previous figure corresponds to the research action plan, which guides in the application and adaptation of the strategy; for this reason, it identifies that management model in order to determine a sequential order from the self-reflective action to the improvement action. This is developed through educational practice, making it possible to approach the problem from diverse self-reflective phases. It starts with the concerns and ideas consolidated in the plan, which is supported by the initial diagnosis.

In addition, it rethinks the structure of the research, from the theoretical foundation to reform an improved strategy and continue with the process of analysis and categorization of results, from the collection tools. For this reason, this representation is a set of actions between theory and practice that focuses the student in all educational processes as a fundamental agent, for the improvement of reading aloud, the readjustment to educational practices under action - reflection and the structuring of interventions in the classroom.

Under these criteria, the methodological strategy consisted in applying an initial diagnosis, which allowed a series of previous actions to complement the plan, in which some evidences are taken to be analyzed, interpreted and modified. It is made up of five phases, which detail the techniques and instruments to be used during the action research. Phase one, called initial diagnosis, uses the participative observation technique and involves evaluation rubrics, a field diary, video recordings and photographs.

Phases two, three and four, consist of the application of the strategy, which during eight months address all aspects of the research, in order to improve the reading aloud of a class of second-grade students through the coordinated movements of brain gymnastics.

Each workshop includes the standard of proficiency in Spanish language and physical education, along with the main objectives and description of brain gymnastics. At the same time, it is composed of the activities to be developed, which present the guidelines to be taken into account when implementing the exercise with a view to teaching reading aloud. In Annex A, a pedagogical workshop can be observed, together with its corresponding activity, in order to complement the previous section.

Finally, phase five evaluates the strategy using a final diagnosis which, through the headings, and other evaluation techniques and instruments consolidates the analysis and categorization of the data. As an added value, the characteristics of the reading aloud process are specified in relation to the theoretical categories as a comparison between the two diagnoses to identify the improvements in each of the 28 students, after the intervention of brain gymnastics. For the reader's vision, two links are attached where the podcasts of the reading and its corresponding analysis can be listened to, in Appendix B.

Having said that, in the following table there is an organized layout of the strategy.

Table 1  
*Schedule of activities*

<b>Phases</b>	<b>Workshops</b>	<b>Months</b>	<b>Brain gymnastics</b>	<b>Objectives</b>
<b>Phase 1</b>	Initial diagnosis	February	Not applicable	To know the difficulties of students when they read aloud
<b>Phase 2</b>	Workshop N°1	March	Peter Pan	To propose spaces of citizenship and respect for the other Waking up the hearing mechanism
	Workshop N°2	April	Cross crawling	To improve students' concentration
<b>Phase 3</b>	Workshop N°3	May	Attention N°1	To promote laterality exercises
		June	Attention N°2	To allow for multiple attention between movement, vision and hearing
<b>Phase 4</b>	Workshop N°4	July	Eye movements	To stimulate the eyes through movement
	Workshop N°5	August	Energetic yawn	To perform movements as a previous training of the facial muscles To develop students' verbal fluency from the articulation of vowels. To improve students' pronunciation from simple tongue twisters.
				Workshop N°6
	Workshop N°7	October	Count to ten	To guide students to sit correctly and improve posture
<b>Phase 5</b>	Final diagnosis	November	Educational output UNAB Radio	To get to know a new space outside the classroom To collect and implement all brain gymnastics exercises
				Conclusions

The table above shows the phases in relation to the workshops, months and brain gymnastics exercises, each distributed during the school year.

On the other hand, the research implements participatory observation as a technique which is used to explore and complement data in relation to the students' context. The researcher actively observes and describes the students' environment, carefully considering the processes, experiences, strengths and difficulties of all participants. Likewise, participatory

observation gives the teacher the opportunity to participate in the implementation of the strategy, recording segments of events or student behaviors during the workshops.

In order to understand data, the information instruments are designed to record and analyze students' experiences. These are the evaluation rubrics 1 and 2, which are designed to be applied in the initial and final diagnosis. They are necessary to know how the state of the children before and after the strategy.

In this regard, Ruiz (2015) states that the rubric is "a resource for comprehensive and formative evaluation, since it is based on access to various sources of information in order to determine whether students have reached a certain level in the development of their competences and, if not, to recognize why it has not been overcome and to propose strategies to do so" (p.85).

Evaluation rubric No. 1 includes the list of the 28 students in relation to the four theoretical categories of study: intonation, fluency, pronunciation and voice volume, together with evaluation rubric No. 2, which contains the description of each theoretical category in relation to the evaluation performances. It is important to clarify that the researcher evaluates each student taking into account the description of the second format. Rubric No. 2 can be observed in Annex C.

The field diary is the means by which the researcher writes down the segments of events, impressions, occurrences or behaviors observed in the process. According to Martínez (2007) the field diary "is one of the instruments that allows the systematization of research practices; furthermore, it improves, enriches and transforms them" (p.77).

In accordance with the above, for this study, the field diary is the instrument that allows us to register the most relevant facts, contribute to the process of analysis and interpretation of data and enrich the relationship between theory and practice by adding up to the learning process. It is distributed by pedagogical workshops, which present the exercise of brain gymnastics, the month, the group, the objectives and relevant aspects.

In the development of the strategy, the experiences are obtained through technological devices due to the need to know in depth the experiences of the students. Video recordings and photographs allow us to know the details that escape the eye of the researcher and that are useful to complement the information obtained, which has to do with attitudes and aptitudes related to brain gymnastics when reading aloud. In addition, significant moments for the project are captured, for example: when the teacher intervenes in the group, when the students develop the workshops or when there are interventions from the participants.

## **Analysis and results**

The following is an analysis of the results obtained from the diagnostic tests.

### **About the initial diagnosis**

The initial test allowed us to record the details observed in the classroom and to know the skills and weaknesses of the group, examining the level of performance in relation to reading competences. Based on the above, the researcher placed the participants in each evaluation criterion taking into account the results obtained. See Table 2.

Table 2.  
*Initial diagnosis*

Group performance evaluation

	<b>Superior</b>	<b>High</b>	<b>Basic</b>	<b>Low</b>
Voice volume	0	11	7	10
Pronunciation	0	13	11	4
Intonation	0	9	13	6
Fluency	0	11	11	6

In order to know the percentages of each evaluation criterion in relation to the categories, a circular scheme was made to illustrate each performance; each one has a representative color, where blue means Superior, green means High, orange represents Basic and red is Low. This is shown in the following graph.

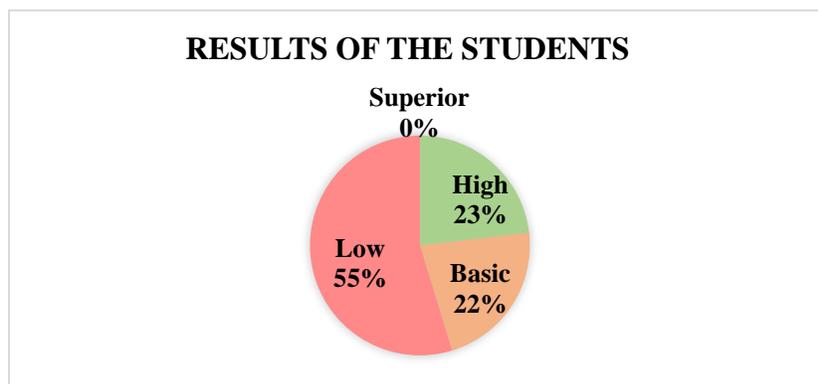


Figure 2. Results of students in the initial diagnosis.

From Figure 2, it can be seen that 55% was obtained in the Low level and 22% in the Basic level in the four components voice volume, pronunciation, intonation and fluency. The sum of these levels represented 77% of students who showed a poor result in reading aloud.

23% were at the High level; this percentage represented a small group of students with some reading aloud skills. In fact, these children have an acceptable performance, which can be

optimized consecutively through brain gymnastics, taking into account that none of the children are at Superior level.

### About the final diagnosis

The final test, whose purpose was to know the progress, to compare data and to determine some situations of the learning process of the students, also, to know the incidence of brain gymnastics in reading aloud in order to record the details observed in the classroom and to know the skills and weaknesses of the group, examining the levels of performance in relation to reading skills.

Based on the above, the researcher located the participants in each evaluation criterion taking into account the results obtained. See Table 3.

Table 3.  
*Final diagnosis*

Group performance evaluation				
Categories	Superior	High	Basic	Low
Voice volume	14	8	6	0
Pronunciation	16	7	2	3
Intonation	13	9	6	0
Fluency	15	7	3	3

Source: Author

As in the first diagnosis, the researcher made a circular outline that illustrates each performance. This is shown in the following graph.

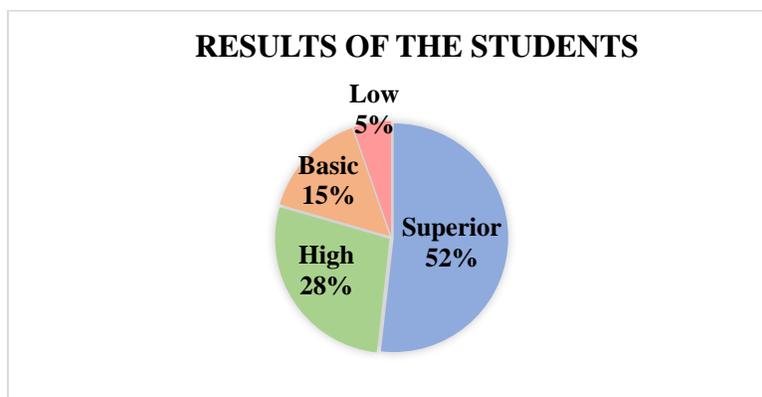


Figure 3. Students' results in the final diagnosis.

Figure 3 shows 5% at the Low level and 15% at the Basic level in the four components observed: voice volume, pronunciation, intonation and fluency. The sum of these levels represented 20% of students who had a poor outcome in reading aloud. This group does not take into account word order, pauses or punctuation and still repeats words or syllables.

In the initial diagnosis the sum of Low and Basic performance was 77% while in the final diagnosis it was only 21%; this means that the students progressed significantly in their processes, since 56% of the class stopped being in the lowest levels. The decrease in the number of students who were at a low reading level (Low and Basic) can also be observed; this is a result of the intervention using brain gymnastics that allowed those students to ascend to the next level.

27% of the students had a High performance and 52% a Superior performance. The sum of these levels represents 79% of students who showed progress in reading aloud due to the continuous process that took place in the classroom; this result includes those students who were at a Basic level in the initial diagnosis and later reached a High level.

Of the previous results, we wish to highlight students who have in mind, when reading aloud, that their voice volume increases, different types of sentences require different intonation and certain pauses are made when punctuation signs are read without the intention of losing concentration and comprehension of the text.

On the other hand, the readers were encouraged to read to their peers showing understanding and confidence during the reading aloud, this happened because, at the same time, the other peers showed an attitude of respect and attention.

In order to contrast the data, in the initial diagnosis, the sum of High and Superior performance were 23%. When comparing this data with the final diagnosis, a favorable improvement in the students' development was obtained, since 79% was achieved in these two levels. Therefore, the incidence of the application of the brain gymnastics workshops in the processes of reading aloud is demonstrated from the concepts of pronunciation, volume, fluency and intonation. Thus, we get to know the progress of the participants, the object of study and the impressions of the strategy oriented under the qualitative character in relation to theory and practice.

In terms of the attitude of listening to the voice of their peers, students showed more appreciation for being attentive to the reading. It was observed in the video recordings that the children showed better posture, were silent and concentrated in the reading. In this respect, this linguistic ability was encouraged in the expected way, giving meaning to the language, relating their previous knowledge, performing processes and interpreting content.

On the social side, the children were more confident in their reading because they had respect, empathy and ability to understand others, recognizing that all human beings are different. Thus, the children were aware of the importance of raising their hand to ask for a turn and at the same time to remain well seated, in silence, avoiding interrupting others. These actions were observed in the development of the eighth workshop, where the children evidenced all they have learned about brain gymnastics.

As for the theoretical categories, in the "voice volume" component in the first test there were no students who read with an audible voice, which generated a lack of concentration in the rest of the group. However, due to the interventions of brain gymnastics, the children made progress in terms of respect for their peers in the act of listening and being heard. Nevertheless, there is still a small group of participants who have difficulty reading aloud since they read, but in a very low tone without raising their voice.

As for pronunciation and verbal fluency, it is observed that the vocalization of words, as it was the case of those with double consonant, was better articulated through the reading of tongue twisters, couplets and other exercises that were adapted to the exercise of brain gymnastics. Likewise, an improvement in the intonation is appreciated, where brain gymnastics led students to recognize the written language to improve their reading processes in a better, clearer, more comprehensible, intelligible and eloquent way.

Ultimately, most students in the group showed better command of breath control by employing voice intensity in the pronunciation of different words and concentration when speaking to an audience. Evidently, the ability to wait for a turn was strengthened, which led the children to no longer stand up, interrupt others, jump up to ask for a turn, or raise their voice, causing chaos in the group.

## **Conclusions**

In relation to the results presented, this chapter shows the conclusions of the study, where the impressions and effects of the pedagogic workshops are determined, in relation to reading aloud and brain gymnastics, in a class of second-grade students of "La Cumbre" Technical Institute.

It is important to establish the conclusions from the objectives of the project. The first specific objective was to identify the difficulties of a class of second-grade students at "La Cumbre" Technical Institute in terms of reading aloud.

In order to fulfill the previous objective, it was necessary to design an initial diagnosis which was considered the starting point of the research. This provided the possibility of recognizing the students' deficiencies before the implementation of brain gymnastics, through a reading activity.

From the initial diagnosis, it was found that most children did not identify words, made incorrect deductions and constantly confused phonemes. Also, they did not know punctuation marks and did not inflect their voice while reading. On the other hand, the other students were perceived to be inattentive when one of their classmates read aloud. In relation to these elements, it could be concluded that listening was not exercised by the students, since they did not listen in the expected way. For this reason, the listening attitude was a very relevant linguistic skill for the educational process, since students improved respect, dialogue was promoted, noise was reduced, and the ability to hear was promoted.

Another conclusion of the specific objective was the progress that children made in textual understanding since, when improving the phonological conscience through brain gymnastics, they approached the recognition of spelling and words overcoming the difficulties and improving understanding of texts.

Consequently, the theoretical categories (voice volume, intonation, pronunciation and reading fluency) were comprehensively addressed in the pedagogical workshops. These elements were used as criteria, in the evaluation rubrics, which were analyzed and compared before and after the strategy. For this reason, it was concluded that it is important to recognize the students' learning difficulties in order to later elaborate the evaluation rubrics taking into account these criteria.

In relation to the second specific objective which was based on applying brain gymnastics to favor reading aloud, first, we got to know the benefits of the strategy in the improvement of the reading processes, to select the most appropriate exercises according to the objective of the study and to adjust each one of them according to the characteristics and needs of the school group. In this way, the conclusions of the second objective are related to brain gymnastics exercises, which are described next in each one of the pedagogic workshops.

In the first workshop, the brain gymnastics exercise "Peter Pan" was applied, which consisted in grabbing the ears by the tips to awaken the mechanism of hearing through play, where the children concentrated their attention on the amplification of sounds, so that they were aware of the act of listening to their peers reading aloud.

From the previous workshop, the following conclusions were established: first of all, teaching children to listen is not a question of making them shut up through the authoritarian and dominant voice of the teacher. On the contrary, it is about guiding children to have a sense of language, developing the attitude of listening with purpose, creating better harmonic spaces in the classroom, and contributing to the formation of competent listeners.

Secondly, hearing was an important element for the development of reading aloud, because it was possible to demonstrate that, by having a listening attitude, phonological awareness is strengthened and therefore the understanding of words and statements. Thirdly, we recognized that the listening mechanism was well received and accepted by the students, since this exercise was simple and fun. Nevertheless, it is still indispensable to continue promoting activities to strengthen the aesthetics of listening in the classroom.

In the second workshop, the brain gymnastics exercise "Cross Crawling" was implemented, which was based on body movements from instructions that involved exercises of laterality, coordination and rhythm. From the above, it was possible to conclude that children, when they are attentive, strengthen their laterality, which influences the educational processes, because, to the extent that the students are attentive, they self-regulate, dominate their own mental processes, acquire lateral dominance, organization of space and reading of texts. In addition, cross crawling activated brain hemispheres, favoring communication between them, which led students to maintain a good functioning of the mind and be more attentive when they listened to their peers' reading.

In the third workshop, attention exercises # 1 and 2 were developed, which were based on making movements of the extremities supported by the visual, auditory and motor tools of the students. From these exercises, it was concluded that, if attention is improved, children have a greater capacity to attend to the development of laterality and to solve the dysgraphia of phonemes p, d, q, b. Thus, children imitated the form of each letter with movements in order to recognize them through the body. Likewise, the exercises stimulated the brain and enriched reading aloud in the management and attention of the pronunciation and vocalization of words.

In the fourth workshop, the brain gymnastics exercises "four exercises for the eyes" were performed, which consisted of moving the eyes in different ways and directions. From these movements, it was concluded that visual stimulation improved the difficulties related to ocular mobility and supported saccadic movements; they allowed children to find a stable balance between fluidity and comprehension of phonological elements. In other words, students improved visual difficulties, related to ocular motor skills by avoiding skipping words or lines and improving vision in reading aloud.

In the fifth workshop, the brain gymnastics exercise "energetic yawn" was done, which consisted in performing physical exercises related to vocal performance in the warming up of facial muscles for the improvement of phonetic competence. By performing these exercises before reading aloud, students showed better diction and their reading became clearer and more natural. For this reason, it was necessary to warm up the facial muscles, to improve phonetic competence. This exercise also included the reading of tongue twisters, which complemented and improved the articulation and variation of the voice.

In the sixth and seventh workshop, the brain gymnastics exercise "count to ten" was implemented, from which it could be concluded that children can have a good attitude for listening, as long as they are well seated and in a state of tranquility, since the position of the back improved the children's health. The exercise of counting up to ten enabled children to breathe slowly and listen to their companions with sense and respect; in previous occasions children were badly seated, with their feet on the seat and making noise.

After developing the previous brain gymnastics exercises for eight months, the final diagnosis was carried out, which was seen as the closing activity of the project. For this, the researcher organized a pedagogical outing to UNAB Radio in order to implement everything learned and develop fluent reading aloud, with good pronunciation, fluency, intonation, voice volume and at the same time be concentrated, attentive and calm when reading aloud.

From this pedagogical outing, it was concluded that it is necessary to build spaces where students feel that what they have learned in class can be experienced in daily activities; in other words, it is very relevant to put what has been learned into practice, hence the relevance of including pedagogical outings in the academic process as a strategy to strengthen learning.

For this reason, the visit to UNAB Radio was enjoyed by the children as a different activity, they shared with their peers outside the institution and learned new knowledge about the radio language. Another conclusion is that the company of the parents was indispensable for these meetings, which in this activity provided security, support, well-being, care and

accompaniment to the 28 students; although it was not a large group, their presence was very necessary.

In terms of behavior when changing space and leaving the school, this workshop led the students to be more interested in the activities: firstly, by standing in a line to buy in the cafeteria; secondly, by waiting for their turn or standing at the end of the line if necessary; thirdly, by listening to the orientations in the computer room, which are necessary in the learning process with ICT; fourthly, by listening to important information from students in other grades, from the staff, from mediators, classroom monitors, teachers, directors and cleaning staff, etc.

Another very important conclusion of the project is related to the fact of generating awareness in children by self-regulating the body in daily life situations. One of them is the reflection of thought in the act of reading aloud as an opportunity to lead children to change their learning and improve academic difficulties and the generation of an integral connection between body communication, sensations, emotions, and the possibilities of language in the act of listening and being heard.

In relation to the third specific objective which was based on analyzing the results obtained from the exercises of brain gymnastics and their integration with reading aloud, it could be concluded that it was necessary to implement a final diagnosis with the purpose of contrasting the data obtained before and after the implementation of the pedagogic workshops. For this, the use of the rubrics #1 and 2 benefited the analysis of the results since it was possible to know the advance of most of the students regarding the theoretical categories in relation to the level of performance of each one of the participants.

In relation to the general objective of the project, which consisted of strengthening the processes of reading aloud, it was concluded that brain gymnastics strengthened the behaviors of the students in their daily school life. Likewise, it facilitated the follow-up and accompaniment of the strengths and weaknesses of the children, evidenced in the educational practice, strengthening the elements of study: voice volume, intonation, pronunciation, fluency, attention, attitude, security, respect, autonomy and confidence in the development of the research project.

For this reason, the use of brain gymnastics in this project promoted the students' processes, favoring communicative, corporal and citizen competences since it favored language, promoted physical exercises and improved the relationships among the students. In this way, brain gymnastics strengthened students' behaviors in their daily school life and mainly in reading aloud.

On the other hand, it could be established that brain gymnastics favored reading aloud being evident in the respect for the other, empathy, patience, attention and verbal expression. As it has been mentioned, these actions favored the participation of the children in the classroom, the importance of listening and being quiet.

In this regard, it was concluded that reading aloud allows readers not only to transmit the contents of the texts, but also to express feelings and emotions while reading. A good reader

does not necessarily have to be a fast reader; speed is not directly related to comprehension, reading fast does not guarantee comprehension of what is read, and at the same time reading slowly implies reading well; the key is to gradually relate the speed as the text is read.

For this reason, it was possible to conclude that the importance of the teaching role in reading aloud is fundamental in the teaching process, since it is not a matter of pressuring the child to read aloud, nor of calling his/her attention when he/she makes reading mistakes, or evaluating through positive or negative points. For this, it is indispensable that the teacher understands that reading aloud is not an automatic process, because it needs accompaniment, nor is it mechanical because there are always things to improve, nor perfect because students must be guided to read well, without expecting their reading to be flawless.

The accompaniment that the teacher must provide to the student must be constant, associated with reflection, flexibility, respect and empathy since it is difficult for children not to make mistakes and even more so when it is a new reading where they may not know the meaning of some words.

In other words, teachers must follow the group of students and select well the texts that will be read aloud, which implies that they already have knowledge and command thereof. Also, they must teach children to pronounce difficult words, recognizing that children can make mistakes and that the processes must be calmly resolved, in order to improve intonation, fluency, voice volume, pronunciation, and security, since it is not only a matter of reading aloud, but of teaching children to read aloud.

Specifically, reading aloud requires the ability to put together a set of elements that are necessary for good reading: attention, attitude, mood, body position, use of language, hearing and respect.

Likewise, it was concluded that pedagogical communication between students and teachers improved reading processes because it strengthened respect in the classroom. This was an advantage for the children because they interacted with different pedagogical strategies that enhanced their communication skills and strengthened the intra and interpersonal relationships of the students who discussed among themselves and did not respect the word of others.

Nevertheless, there were situations in the classroom, where it was felt that the children were not making progress, since some of them had difficulties to recognize the different interrogative, exclamatory statements and at the same time they omitted punctuation marks, which led the teacher researcher to have patience and to wait for the children to make progress little by little in their process.

Regarding the teaching role, it could be concluded that the research project prepared and instructed the researcher teacher in a formative way, through the exploration of different theoretical references that organized and taught new strategies for the solution of problems observed in the classroom. For this reason, this study strengthened research skills in order to promote a reflexive and critical attitude towards educational reality.

With respect to the educational reality, the research allowed the triangulation between the researcher, theory and practice, with that relation being one of the main conduits for the development of the research due to the need to improve the teaching and learning of reading aloud. In other words, it was possible to conclude that triangulation developed spontaneously in the project since it unified the theoretical elements with the reality of the group of students and the constant practice of satisfactory experiences in and out of the classroom.

Because of these situations, the teacher recognized that the children are in their learning process, that they should be taught with love and patience since they are people who are starting their school life and that it is very important that the children feel loved and valued by their teacher.

Regarding the reading aloud process, one of the main conclusions reached by the researcher is that, within the process of learning the language, it is ideal that teachers understand that learning to read aloud is a process. In other words, it is essential to go step by step and take into account the different skills that make up reading aloud. Without a doubt, this type of reading is fundamental for all school development and for the very life of each student, but it is indispensable that it be taught with respect and progressively.

This work illustrates to future research a way to teach and approach reading aloud in the classroom, given that it strengthens teachers' competences in the search for knowledge, contextualization of teaching, relationships between the theory of brain gymnastics, the practice of exercises and the self-reflective actions of pedagogy.

On the other hand, the present project proves the importance of knowing the context and the capacities of the participants, which are necessary for the execution of a qualitative action research, with the purpose of accompanying and guiding the students gradually towards the processes of reading aloud according to their needs and capacities.

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## Appendix A.

### *Description of the second workshop*

“La Cumbre” Technical Institute

#### Second Workshop

Competence standards	Language: produce oral texts that respond to different communicative purposes.  Physical Education: explore basic forms of movement and their combinations in different situations and contexts.
Objectives	<ul style="list-style-type: none"> <li>• Improve students' concentration.</li> <li>• Stimulate the senses.</li> </ul>

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- Propose spaces of citizenship in the respect for the other in the act of listening and being heard.

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**Description** Include an activity that is based on the "cross crawl" exercise of brain gymnastics allowing the combination of body and mind to improve attention in students.

In this exercise both brain hemispheres are activated and communicate in a balanced way, helping the formation of nerve networks. In addition, it prepares the brain for a higher level of reasoning being excellent to activate the mind/body functioning (Ibarra, 2007).

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**ACTIVITY N°1**

**Objectives of the activity**

- Activate the brain hemispheres.
- Improve student coordination.

**Description:** This exercise helps improve coordination and laterality with body movements.

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**Orientations**

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**Activity**



Instruct students to touch their right elbow (bending the arm) with their left knee (lifting and bending the leg).

Then instruct students to touch the left elbow (bending the arm) with the right knee (lifting and bending the leg) (Ibarra, 2007).

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**Brain gymnastics**

Invite students to stand and do the activity.

Allow the child to make a mistake and correct his or her own mistake.

Encourage boys to compete with girls.

Enjoy the activity with the children.

Encourage and congratulate the student by encouraging him/her to do things right.

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Source: Author

**Annex B.**

**Analysis**

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**Initial diagnosis**

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**Final diagnosis**

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The student is performing poorly, doing syllabic reading, which consisted of reading the words syllable by syllable, with absence of fluency, pauses and intonation.

As he did not easily recognize the words, he paused the reading in order to break down their structure, which made him lose the meaning and line of the text.

On the other hand, he did not make proper inflection and omitted letters and syllables in the reading.

At various times Camilo Andres was observed to be very distracted, feeling bad and taking his attention to other parts of the room.

The student is at a Basic performance level, still showing errors in pronunciation, intonation, and voice volume. The child is constantly missing classes and has rarely participated in the brain gymnastics workshops. On the other hand, the child does not practice reading at home, does not fulfill his duties and does not have the support of his family.

The people attending the meeting have been summoned to find out the reasons for their absence, knowing that the child is missing because he or she has been found to be ill, but this does not have any medical justification.

Podcast

First reading: <https://soundcloud.com/angie-duarte-484794689/camilo-inicial/s-LWUwA>

Final reading: <https://soundcloud.com/angie-duarte-484794689/final-camilo/s-H0v9d>

Source: Author

**Annex C.**

*Rubric No. 2*

MASTER'S DEGREE IN EDUCATION – “LA CUMBRE” TECHNICAL INSTITUTE				
EVALUATION RUBRIC NO. 2				
CATEGORIES	SUPERIOR	HIGH	BASIC	LOW
VOICE VOLUME	Reading is audible at all times	Reading is audible at various times	Reading is audible in a few moments	Reading is not audible at any time
FLUENCY	Reading is clear. It is perceived naturally with ease and spontaneity	Reading is clear. It is perceived in a natural way	Reading is slow. It is perceived as forced with pauses and hesitations	Reading is not clear. It is perceived as forced, with many pauses and hesitations

	Always takes punctuation into account when reading	Almost always takes punctuation into account when reading	Sometimes takes punctuation into account when reading	Never takes punctuation into account when reading
PRONUNCIATION	<p>Always articulates and makes vowel and consonant sounds naturally</p> <p>Always pronounces easily words with double consonants</p>	<p>Almost always articulates and makes vowel and consonantal sounds</p> <p>Almost always pronounces words with double consonants</p>	<p>Sometimes articulates and makes vowel and consonant sounds with difficulty</p> <p>Sometimes has difficulty pronouncing words with double consonants</p>	<p>Never articulates vowel or consonantal sounds</p> <p>Never pronounces words with double consonants</p>
INTONATION	Voice inflection is always perceived when pronouncing sentences	Voice inflection is almost always perceived when pronouncing sentences	Voice inflection is sometimes perceived when pronouncing sentences	Voice inflection is never perceived when pronouncing sentences