

UNIVERSIDAD HISPANOAMERICANA

FACULTY OF EDUCATION

THESIS TO OBTAIN THE DEGREE OF LICENCIATURE IN BILINGUAL
PRESCHOOL

The Impact of Using Neurodidactic Strategies to Improve the Speaking
English Learning Process of Children with Selective Attention on 5-year-old
Children from Sek International School during the Second Quarter of 2023.

Postulant

María Valeria Sánchez Rojas

Tutor

Roy Alfaro Alfaro

San José, Costa Rica

July, 2023

Table of Contents

List of Tables	v
List of Graphs.....	vi
Dedicatory	xi
Acknowledgment.....	xii
Abstract/Resume	xiii
CHAPTER I:	2
RESEARCH PROJECT	2
1.1 Problem Approach	2
1.1.1 Background of the problem.....	2
1.1.2 Problematization	4
1.1.3 Justification.....	5
1.2 Problem Statement	7
1.2.1 Research question.....	7
1.3 Objectives.....	7
1.3.1 General Objective.....	7
1.3.2 Specific Objectives.....	7
1.4 Scope and limitations	8
1.4.1 Scope.....	8
1.4.2 Limitations	9
CHAPTER II:.....	11
THEORETICAL FRAMEWORK.....	11
2.1 Theoretical Framework or Literature Review	12
2.2 Historic Context	12
2.1.1 Vision.....	15
2.1.2 Mission	15
2.2 Theoretical Context.....	16
2.2.1 Learning about Neurodidactic	16
2.2.1.1 Principles of Neurodidactic.....	17
2.2.1.2 Ways the brain learns.	18
2.2.1.3 Neuroplasticity in education.	19
2.2.2 Contribution of Neurodidactic in the Education Field	20
2.2.2.1 Teacher’s role in preschool since neuroscience.	21
2.2.2.2 Neuromyths.....	22

2.2.3 Selective Attention.....	23
2.2.3.1 Theories of selective attention.....	23
2.2.3.2 Causes of lack of focused attention in childhood.....	25
2.2.3.3 Indications of lack of focused attention in childhood.....	26
2.2.4 Factors that affect the learning process.	27
2.2.5 Neurodidactic applications in the classroom.	28
CHAPTER III:	11
METHODOLOGICAL FRAMEWORK	11
3.1 Type of research	31
3.1.1 Purpose.....	31
3.1.2 Temporal dimension.....	32
3.1.3 Framework	32
3.1.4 Sources of information	33
3.1.5 Hypothesis.....	34
3.1.6 Nature.....	36
3.1.7 Character	36
3.2 The subject of study	37
3.2.1 Population	37
3.2.2 Sample	37
• Non-Probabilistic.....	37
3.3 Techniques and instruments.....	38
3.3.1 Interview	38
3.3.2 Observation.....	38
3.3.3 Survey.....	39
3.3.4 Document Analysis	39
CHAPTER IV:	31
DATA ANALYSIS AND INTERPRETATION	31
4.1 Analysis of instrument N°1 Interview	41
Table 1.....	41
Table 3.....	43
Table 4.....	44
Table 5.....	45
Table 6.....	46
Table 7.....	47
Table 8.....	47

4.2 Analysis of instrument N°2 Observation	48
Graph 1	49
Graph 2	50
Graph 3	51
Graph 4	52
Graph 5	53
4.3 Analysis of instrument N°3 Survey	54
Graph 6	54
Graph 7	55
Graph 8	56
Graph 9	57
CHAPTER V:	41
CONCLUSION AND RECOMMENDATIONS	41
5.1 Conclusion.....	59
5.2 Recommendations	61
CHAPTER VI:	59
PROPOSAL.....	59
6.1 General Objective.....	64
6.2 Specific Objectives.....	64
6.3 Neurodidactic Strategies	64
References	68
ANNEXES	64
Annex 1	73
Annex 2	76
Annex 3	78

List of Tables

Table 1	39
Table 2	40
Table 3	41
Table 4	42
Table 5	43
Table 6	44
Table 7	45
Table 8	46

List of Graphs

Graph 1.....	47
Graph 2.....	48
Graph 3.....	49
Graph 4.....	50
Graph 5.....	51
Graph 6.....	52
Graph 7.....	53
Graph 8.....	54
Graph 9.....	55

SWORN DECLARATION

Yo, María Valeria Sánchez Rojas, con cédula de identidad 1-1708-0340, mayor de edad, egresada de la carrera de Licenciatura Enseñanza del Inglés de la Universidad Hispanoamericana, hago constar por medio de éste acto y debidamente apercibido y entendido de las penas y consecuencias con las que se castiga en el Código Penal el delito de perjurio, ante quienes se constituyen en el Tribunal Examinador de mi trabajo de tesis para optar por el título de Licenciatura en la Enseñanza del Inglés juro solemnemente que mi trabajo de investigación titulado: "The Impact of Using Neurodidactic Strategies to Improve the Speaking English Learning Process of Children with Selective Attention on 5-year-old Children from Sek International School during the Second Quarter of 2023", es una obra original que ha respetado todo lo preceptuado por las leyes penales, así como la Ley de Derecho de Autor y Derecho Conexos número 6883 del 14 de octubre de 1982 y sus reformas, publicada en la Gaceta número 226 del 25 de noviembre de 1982; incluyendo el numeral 70 de dicha ley que advierte; artículo 70. Es permitido citar a un autor, transcribiendo los pasajes pertinentes siempre que éstos no sean tantos y seguidos, que puedan considerarse como una producción simulada y sustancial, que redunde en perjuicio del autor de la obra original. Asimismo, quedo advertido que la Universidad se reserva el derecho de protocolizar este documento ante Notario Público. En fe de lo anterior, firmo en la ciudad de San José, a los 27 días del mes de junio del año dos mil veintitrés.

Firma



Cédula: 1-1708-0340

Carta del Tutor

San José, 27 de junio, 2023

Universidad Hispanoamericana
Licenciatura en la Enseñanza del Inglés
Sede: Llorente

Estimados señores:

La estudiante María Valeria Sánchez Rojas, cédula de identidad 1-1708-0340, me ha presentado para efectos de revisión a aprobación, el trabajo de investigación denominado: “The Impact of Using Neurodidactic Strategies to Improve the Speaking English Learning Process of Children with Selective Attention on 5-year-old Children from Sek International School during the Second Quarter of 2023.” el cual ha elaborado para optar por el grado académico de Licenciatura en preescolar bilingüe. En mi calidad de tutor, He verificado que se han hecho las correcciones indicadas durante el proceso de tutoría y he evaluado los aspectos relativos a la elaboración del problema, objetivos, justificación, antecedentes, marco teórico, marco metodológico, tabulación, análisis de datos, conclusiones y recomendaciones.

De los resultados obtenidos por el postulante se obtienen la siguiente calificación:

	<i>Description</i>	<i>%</i>	<i>% Obt</i>
a	Originalidad del tema	10%	10%
b	Cumplimiento de entrega de avances	20%	20%
c	Coherencia entre los objetivos, instrumentos aplicados y los resultados de la investigación	30%	30%
d	Relevancia de las conclusiones y recomendaciones	20%	20%
e	Calidad detalle del marco teórico	20%	20%
	Total	100%	100

En virtud de la calificación obtenida, se avala el traslado al proceso de lectura

Roy
Alfaro
Alfaro

Firmado
digitalmente por
Roy Alfaro Alfaro
Fecha: 2023.06.27
19:36:37 -06'00'

MSc. Roy Alfaro Alfaro
Cedula: 2-306-905

CARTA DE LECTOR

San José, 03 de julio, 2023

Universidad Hispanoamericana

Sede: Heredia

Carrera: Licenciatura en Preescolar Bilingüe

Estimados señores:

La estudiante María Valeria Sánchez Rojas, cédula de identidad 1-1708-0340

me ha presentado para efectos de revisión y aprobación, el trabajo de investigación denominado **"The Impact of Using Neurodidactic Strategies to Improve the Speaking English Learning Process of Children with Selective Attention on 5-year-old Children from Sek International School during the Second Quarter of 2023."**, el cual se ha elaborado para obtener su grado de Licenciatura en Preescolar Bilingüe. He revisado y he hecho las observaciones relativas al contenido analizado, particularmente lo relativo a la coherencia entre el marco teórico y análisis de datos, la consistencia de los datos recopilados y la coherencia entre éstos y las conclusiones; asimismo, la aplicabilidad y originalidad de las recomendaciones, en términos de aporte de la investigación. He verificado que se han hecho las modificaciones correspondientes a las observaciones indicadas.

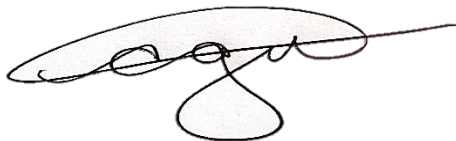
Por consiguiente, este trabajo cuenta con mi aval para ser presentado en la defensa pública.

Atte.

MSc. Ariel Gustavo Vargas Vindas

Cédula:204420300

Firma:





Acta de Graduación

Ante el Tribunal Calificador de la Universidad Hispanoamericana, integrado por: M.Ed. Julio César Castro Miranda, MBA, representante dirección de carrera Msc. Roy Alfaro Alfaro tutor y MSc. Ariel Vargas Vindas lector, se presenta a la postulante Sánchez Rojas Maria Valeria Cédula n° 1-1708-0340 quien hace defensa pública de su trabajo final de graduación, titulado: "THE IMPACT OF USING NEURODIDACTIC STRATEGIES TO IMPROVE THE SPEAKING ENGLISH LEARNING PROCESS OF CHILDREN WITH SELECTIVE ATTENTION ON 5-YEAR- LD CHILDREN FROM SEK INTERNATIONAL SCHOOL DURING THE SECOND QUARTER OF 2023", Para optar por el grado académico de Licenciatura en Educación Preescolar Bilingüe.

Una vez escuchada la exposición del postulante y habiendo procedido al periodo de preguntas por parte de los miembros del Tribunal, se procede en privado a la deliberación de rigor y se concluye que la estudiante: Sánchez Rojas María Valeria, ha Aprobado su requisito de graduación con un puntaje de 94 en la escala de 0 a 100.

Firmado en la Universidad Hispanoamericana el día: viernes 28 de julio del 2023.

Director(a) de Carrera:	JULIO CÉSAR CASTRO MIRANDA <small>Firmado digitalmente por JULIO CÉSAR CASTRO MIRANDA Fecha: 2023.07.31 16:23:19 -06'00'</small>
Tutor(a):	Roy Alfaro Alfaro <small>Firmado digitalmente por Roy Alfaro Alfaro Fecha: 2023.08.01 15:46:15 -06'00'</small>
Lector(a):	
Estudiante:	

Dedicatory

This investigation project is dedicated to my family who have supported me and motivated me since the beginning of the career. Although, the way was not easy, I never gave up and I carried on. Today, I feel very proud of who and where I am.

I am grateful to God, for giving me the opportunity to study, for give me the wisdom to be able to conclude my thesis with discipline and effort and to satisfy my goals and dreams. Thank you for putting angels on my way who were always helped me in whatever I needed.

I thank to my friends and colleagues who have support me into this process and who in one way or another have helped me during the development of my research.

Acknowledgment

I am grateful to all the people who support me in carrying out this thesis. Since God forgive this opportunity, my family for their support since the first day I started my career, my friends who have support me when I think I cannot more and to my colleagues for support me and share their experiences.

Thanks to the professors of Universidad Hispanoamericana because without their learning this investigation would not have been carried out in the way it was done. All the courses taken to obtain the bachelor's degree were so helpful and I got a lot of information that helped me to understand better what I want to. Finally, I thankful to Sek Costa Rica International School for letting me do this investigation in their institution.

Abstract/Resume

Introduction

One of the most important roles of teachers is to facilitate children's education, for that it is important educators must constantly take training to improve their knowledge and learning methodologies and techniques that could be applied in the classroom in a way to help their students and get a better environment in the institution.

MBE (Mind, Brain, and Education) it is related to the new science of learning and also known as Educational Neuroscience. It is an interdisciplinary research field that tries to integrate the daily knowledge, the methods of learning and development of children with perceptivity from the field of education and aims to improve their understanding of the way environmental factors influence their brain structure and function. It is also an important science that studies how education changes the brain and interventions aimed at improving brain function can impact learning. (Educational Psychology, 2021).

Sometimes, teachers are explaining a topic and some students are focus on other things different to the topic they are learning that day in the class. So, getting knowledge about neurodidactic, it will make it easier to identify the causes of a particular learning disability because there will be more knowledge of how the brain works.

What is expected with this investigation, is the necessity to promote neurodidactic strategies to improve the Speaking English learning process of children with selective attention of 5-year-old, which must be based on previous experiences and situations that have occurred in the classroom intending to the intention to get a good environment and the students enjoy their classes.

The purpose is to provide information about neuroeducation, how the brain learns, neurodidactic and since those points of view suggest strategies applicable in the classroom to support children with selective attention of 5-year-old. The objective of this investigation is to describe the contribution of neuroeducation in a way to benefit kids during the Speaking English learning process of these students of preschool.

CHAPTER I
RESEARCH PROJECT

1.1 Problem Approach

1.1.1 Background of the problem

In the classrooms, there are several learners with different learning disabilities, but it could be difficult to identify them or find out strategies for those students. If teachers get knowledge about neurodidactic makes it easier to identify the causes of a particular learning disability because there will be more knowledge of how the brain works, and so on. Thus, design appropriate methodologies that can be used in the classroom.

In his thesis, Robert D. Cantwell (2021) explained the importance of exploring the beliefs expressed by preschool teachers about early literacy as they implement neuroeducation-based strategies and interventions with public school K-12 teachers.

He made construction of concept maps with accompanying interview questions, video-stimulated recall interviews, and a final semi-structured, open-ended face-to-face interview. The purpose of the concept maps and video recorded lessons was to elicit information-rich responses from each participant and gather information about the early literacy beliefs of each participant.

With that investigation, he got to the conclusion that preschool teachers' beliefs are a powerful construct and an influence on how preschool teachers think about their work and enact what they know. Some preschool teachers express their beliefs about early literacy within a neuroeducation framework in various ways depending on the method used. It is impressive that preschool teachers' core beliefs about early literacy do not change over time, but, throughout their careers, some intentionally seek out new learning.

Julie Porter 2021 examined the use of neuroeducation strategies in the classrooms, with the objective that students learn best when teachers implement classroom instructional strategies that engage their whole brain. The population she considered were adult teachers who teach grades six through eight at neurodiverse and neurotypical private middle schools.

She did a quantitative correlational study that examined how educators utilized instructional strategies that align with how the brain learns in private middle schools for students with diagnosed learning differences.

In conclusion with her investigation, he got the results that indicated that if an educator reported using one instructional strategy in one domain, they were more than likely to report using another instructional strategy in another domain.

Keri Leigh Altig (2006) investigate the effects of selective attention on preschool teachers and children behavior. People who participated were child and teacher from the National Association for the Education of Young Children accredited child development centers located in a large Southwest city.

Her objective in this investigation was to provide data supporting the use of behavioral strategies with young children; specifically, examining the use of the selective attention approach and its effect on young children's engagement in activities while enrolled in community-based centers.

She did questionnaires to gain insight into each teacher's knowledge and use of positive reinforcement and selective attention, she did teacher observations using the Placheck system were used to observe child engagement, she scans the videotaped preschool classroom environment every two minutes and count the number of children

engaged in circle time activities. The audio recording on the iPod handed the experimenter with audio prompts to overlook the environment at two-minute intervals and to record child engagement.

Finally, this study used a multiple baseline design to determine whether training preschool teachers to use selective attention via verbal praise and praise cues increased teachers' use of the die approach. Second, this study was used to determine whether the implementation of selective attention increased children's engagement during circle time activities. Analysis of data revealed that training preschool teachers to use selective attention was effective with some but not all teacher participants. Analysis of data was inconclusive about concerning increasing engagement in child participants.

1.1.2 Problematization

The problem arises from the action to learn further about neuroeducation, since educators do not have enough knowledge about it and its benefaction in the English learning process of learners with focalized attention.

In the school where the investigation is going to take place there are some students with selective attention; that means, there are kids with the capability to react to the important stimuli when several occur at once. Also, it is the processes that allow a person to select and concentrate on a particular input for further processing while contemporaneously suppressing inapplicable or distracting information. (Astheimer, L., Sanders, L., 2011).

Occasionally, teachers are explaining a topic and there is a student focus on a thing completely different of the content they are learning that day in the class. So, getting knowledge about neurodidactic it will make easier to identify the causes of a particular

learning disability because there will be more knowledge of how the brain works. Therefore, design appropriate applicable methodologies that can be used in the classroom. (Casey Aubin, 2020).

It turns out to be an innovative topic because some years ago, teachers did not hear about neurodidactic or neuroeducation after all, it was more related to psychologists and neurologists, but during last years, there have been increasing making way for other professionals, in this case, educators. For that reason, there is a good opportunity for teachers to get more knowledge about neurodidactic strategies that they can apply with students with selective attention and at the same time they can apply some of them with all kids in the class.

A common problem of preschool teachers is that they do not have enough time for being able to apply different strategies for all the students that are in the classroom. So, the proposal is to propose neurodidactic strategies which improve Speaking English learning of children with selective attention in class.

This research proposal will influence positively kids because even though their native language is Spanish when the teacher is introducing a topic is focused on the majority of the students but do not consider what is happening with children with selective attention, applying these strategies the knowledge will be the same for all the kids. Children will be more interested in English class.

1.1.3 Justification

The education world is always changing for that reason educators should be always learning. Nowadays, there are a lot of methodologies and strategies that teachers can apply

in the classroom. It is important educators are constantly learning because each day there are more students with different learning necessities, and it is necessary to understand what is happening and how teachers can support them during their learning process in the classroom.

When there are students with selective attention is important to consider the factors that could be distractors for them in the classroom, for example, competing visual stimuli, a highly decorated classroom, an undecorated classroom and so on.

When kids start school is one of the most significant and privileged developments for the child. They will face new challenges compared to their ages before because they were babies, and it will lead them to an important cognitive, emotional and social evaluation. The class that the child attends, the people around them and everything defining the child assumes an important role in their attention. (Vakil E, 2009).

The purpose is to provide information about neuroeducation, how the brain learns, neurodidactic and since those points of view suggest strategies applicable in the classroom to support children with selective attention. The objective of this investigation is to describe the contribution of neuroeducation in a way to benefit kids during the English learning process of these preschool's students.

At the same time, being able to comprehend the neurodidactic and its implementation in the classroom. Also, teachers will get more information about the importance of the teaching role and the implication of some neuromyths in the teaching-learning process. Thus, all those factors constitute important contributions of neuroeducation to the learning process of the preschool's students. It pretends that each

neurodidactic strategy supports the progress of the students in a creative way, also increases the knowledge of the educator and encourages socio-educational development actions in children to improve their education.

1.2 Problem Statement

Students with selective attention of 5-year-old present difficulties to improve their speaking English process in the classroom.

1.2.1 Research question

What is the impact of using neurodidactic strategies to improve the Speaking English learning process of children with selective attention from Sek International School in Curridabat, San José during the Second Quarter of 2023?

1.3 Objectives

1.3.1 General Objective

- a) To analyze the impact of Using Neurodidactic Strategies to Improve the Speaking English Learning Process of Children with Selective Attention from Sek International School in Curridabat, San José during the Second Quarter of 2023.

1.3.2 Specific Objectives

- a) To recognize the neurodidactic strategies used in the English learning process of children with selective attention of 5-year-old.
- b) To distinguish the areas that strengthen the process of learning English of children.

- c) To identify the benefits/advantages of the implementation of neurodidactic strategies during the Speaking English learning process.
- d) To propose different methods which integrate neurodidactic in the learning process of students.

1.4 Scope and limitations

1.4.1 Scope

This study explores neurodidactic strategies that teachers can apply in the classroom with their children. It focuses on students with selective attention on 5-year-old at SEK International School during the second quarter of 2023. The objective is not only benefiting the students with selective attention but also the teachers in charge of them during this school year.

Considering that this investigation pretends to provide a guide to implementing neurodidactic strategies to improve the speaking English learning process of students with selective attention; those will be useful for the students that are in this moment in the school as for future children that teachers will have in next school years.

Moreover, this investigation pretends to give solutions to the problem, suggesting strategies that teachers could implement during English classes in a way to improve their students' comprehension of the foreign language. At the same time, these neurodidactic strategies could be applied to future children with selective attention.

1.4.2 Limitations

Some of the limitations are there has been difficulty of finding teachers who have knowledge about neuroscience, neurodidactic and strategies that they can apply to the students with selective attention because that means that first, they need to get information about those topics to understand better their students and what neurodidactic strategies they can apply in the classroom during the speaking English learning process.

Also, it is complicated to find in Costa Rica institutions that provide courses or training to teachers who want to implement new methodologies in their classrooms for that reason, teachers look for those courses in other countries to take them online or if there are in Costa Rica they also prefer to take online courses because there are cheaper than presential courses. For that reason, if educators want to learn more about neurodidactic is recommendable to look out for any virtual course in a way that they learn more about it.

CHAPTER II
THEORETICAL FRAMEWORK

2.1 Theoretical Framework or Literature Review

This chapter describes important information about the institution where this research is taking place. Also, there is relevant information about neurodidactic, its connection with the educational field, the principles, ways the brain learns and its development, theories about selective attention, causes, indications and its influence in the speaking English learning of children.

2.2 Historic Context

On March 12, 1988, the SEK-Costa Rica International School was inaugurated, under the direction of Mr. Luis Martínez Zorzo and located in Los Yoses, in San Pedro de Montes de Oca, San José. It began its classes with seven groups, from preschool to fifth grade of Basic General Education. All these levels are recognized by the Costa Rican Ministry of Public Education.

Due to the great acceptance that the school had for part of the families, in 1990 the construction of several pavilions began to respond to the demand of new students and the existing academic requirements. In 1991 the school year was characterized by the fact that the institution changed its location to where it is currently located in Cipreses de Curridabat, a piece of land far from the city, part of the characteristic coffee plantations of the area. And with an extension of 36,000 square meters.

In 1992 the new building was officially inaugurated. On May 17, 1995, finished the transfer to the actual location in Cipreses de Curridabat. And on June 12, 1995, the official inauguration ceremony was held. Finally, a few months later the swimming pool and the changing room pavilion were built as their needs were greater.

In November 1996, the construction of four classrooms started, to intending to deliver for the start of the new school year. In 1999 two fields were built, one for volleyball and the other for basketball. Finally, in 2003 the College Sports Center was built, a national benchmark for its excellent finishes and avant-garde design.

And in 2011, the school pool underwent major modernization transformations. In this way, its roof was made and its surface was expanded to accommodate more public and fit out the first-level preschool, primary and secondary locker rooms, with all the security systems for students.

At the end of 2015, a new building was opened where on its first floor, there were the art and music classrooms and the library. Furthermore, five additional classrooms and their corresponding restrooms are being built on the second floor.

In 2016, the computer room was remodeled, and there was created an iMac classroom, with the latest equipment for design, programming, and robotics.

Currently, SEK-Costa Rica International School serves a population of approximately 750 students, distributed as follows: 140 in Preschool, 340 in Primary and 270 in Secondary. Achieving attention from the nursery level (children 1 year and 6 months) to the twelfth year of the International Baccalaureate program.

From the early age of kindergarten (Play Group), the children are immersed in an excellent process of bilingual education. Every student, upon completing primary school, has an adequate command of English and Spanish, both orally and in writing. Other languages taught at the school are Mandarin and French.

In the course of the school day, new pedagogical and technological academic and organizational initiatives are launched which it is intended to create systematic study habits, potentiate the culture of effort and improve the assimilation and permanence of both theoretical and practical knowledge. in a constructive environment and effective motivation. In the academic curricular framework for Primary, the subjects of, English, Science, Mathematics, Social Studies, Spanish, French, Mandarin, World Situations and Physical Education are detailed. In addition, students attend lessons in an integrated way: Ballet/Karate, Swimming, Music, Plastic Arts, Robotics, Programming and Religion/Ethics.

In addition, study and exchange programs are offered with other SEK schools, including, the United States, located in Boca Raton, Florida, and Saint Johns's School, in England. Other extracurricular and international activities that students can enjoy are, InterSEK Sports and Cultural; the White Week in Chile, held in a ski resort, where the participants will receive classes taught by professionals to learn or practice this white sport, and the "Green Week", where our school is the host. In this green experience, students can enjoy and learn about Costa Rica's environmental diversity and environmental conservation.

To guarantee the safety and the full physical and emotional development of the learners, the SEK has adequate infrastructure. For the little ones, the preschool pavilion has spacious, ventilated and illuminated classrooms, an amphitheater, a large "playground" and large green areas.

The SEK Costa Rica International School guarantees an education of excellence in an atmosphere that encourages the practice of sports and the development of skills in the artistic, technological and values areas.

SEK Costa Rica offers a world-class comprehensive education, in which we seek to BE BETTER every day!

2.1.1 Vision

Sek International School (1892) mentioned on its web page its vision:

“The SEK International Institution considers it essential to direct educational efforts to ensure that children and young people can live happily in the world and in the time that corresponds to them, considering cultural, political, social, and technological aspects, among others.”

2.1.2 Mission

Sek International School (1892) mentioned on its web page as its mission is:

““Education of the Human Being”, through comprehensive and global action, promotes multiculturalism and the diversity of the multi-national, multi-ethnic and hetero-speaking community that forms it and to which it provides service, through a dynamic of collaborative and participatory work that allows it to offer maximum levels of quality and demand in all its teaching, research, and cultural and social extension activities that reflect the universal perspective of knowledge.”

2.2 Theoretical Context

This section describes relevant information about neurodidactic, its connection with the educational field, the principles, ways the brain learns and its development, theories about selective attention, causes, indications and its influence on the speaking English learning of children.

2.2.1 Learning about Neurodidactic

During many years there are some investigations about the brain that evidence the contribution of it; how the brain learns, the role of the brain and how it is related to emotions and thoughts. It is necessary to understand how the human brain works during the learning process and it will be beneficial thanks to the motivation and challenges of every day.

There are some new terms that this new discipline has conceive such as “neuroeducation”, “educational neuroscience”, “mind, brain and education”, and so on. With time it has been found that there is an important connection between neuroscience and education because not only neuroscience is needed in education.

Neuroscience is the set of scientific disciplines that study the nervous system to understand in a better way the mechanisms that regulate the control of nerve responses and brain conducts. The International Society “Mind, Brain and Education” is promoting the integration of some disciplines that look over learning and human development, which means, gathering information about education, biology and cognitive science to make up a new analysis of main, brain and education. (Semih Summak, 2010).

Neurodidactic will be an innovative methodology for teachers because it will help them to understand how the brain of their students learns, how their social conditions are, how their abilities can influence their learning process and understand how the use of supportive neurodidactic strategies can allow to educators to help to their kids learn better.

2.2.1.1 Principles of Neurodidactic.

There are some principles about neurodidactic that help educators to understand better the implication of neuroeducation in the educational field. At the same time, those will support to understand the brain of students with some learning difficulties.

- a) **Learning is fun:** the kids will decide by themselves what they want to do, and what they want to learn. They will take the initiative to take decisions or to solve problems, they will get a huge feeling of happiness because they get something new for themselves and at the same time they are enjoying the process.
- b) **Learning often occurs spontaneously:** while walking, talking, laughing, and playing children will acquire different skills without any directed instruction. They will increase their knowledge with daily activities that they do.
- c) **The years before puberty are particularly sensitive phases for learning:** as sooner people learn to practice a sport, play an instrument or speak a new language, it would be better. Because there are concepts that are just learned in a moment and then there are forgotten but there are others that will help increase that knowledge or ability in a way to acquired it over many years.
- d) **Learning is also an emotional process:** the emotions of children are considered in the process learning of the students, it will influence their success and if they relate

the learning with the child's experiences the study will be more motivated for the students.

- e) **An environment lacking in stimuli makes learning difficult:** an environment rich in sensory stimuli will easily get the attention of kids but if the environment poor in sensory stimuli the children will not feel comfortable, and their learning will be difficult in that place. (Westerhoof, N., 2010 cited by Andrea, 2013).

2.2.1.2 Ways the brain learns.

To understand better how the brain learns, there is important to know new learning strategies because with the years there are more methodologies and techniques that educators could use in their classroom and the same strategies cannot always be used so for that reason, there is important to innovate the work in the classroom.

The brain consists of three principle sections: stem, cerebellum and cerebrum. Of all of them, the cerebrum is most important in learning because this is where functions like memory and logic do. Each area of the cerebrum specializes in a specific function as hearing, sight, touch, short or long-term memory, language and logic capacities are the most important for the learning of all students. (Donald J. Ford, 2011).

As an example of this, think about your commute, you do not have to think a lot about how to get there because it is something that you constantly do, so you already know what way you will take. The neurons that control that memory have communicated so often and they create like a tight bond so for that reason that knowledge is always in your brain.

Instead, when you go to a place you have no idea how to get because you have never gone before that will be harder for the brain because you need to learn those new

directions, know where that place is, what is the best way or road to get there. What happens in this case, is the neurons involved in the trip to the new destination have not participated previously so that could make the commute a little bit harder at the beginning but then it will be easier. To get it, they require to form new connections with the brain in a way to produces a tight bond as in the previous example.

2.2.1.3 Neuroplasticity in education.

Neurons are cells that are part of the central nervous and are responsible for carrying information between the brain and other parts of the body, as well as to and from different bits of the brain. Without the neurons it would be impossible that people think and learn something new.

Neuroplasticity is the ability or capability of the nervous system to change its activity in response to natural or foreign stimulants by reorganizing its structure, functions or connections. If neuroplasticity gets a good operation of its aspects, the learning of the learners will be better and more satisfactory for the educators because they will see how putting into practice different methods or activities, it is an excellent exercise for the brain and the neurons.

Some aspects that will enhance neuroplasticity are for example, a night of good sleep is the most important aspect to enhance the neuroplasticity. Then, dopamine is an important neurotransmitter because it can strengthen synaptic connections and situations can be modulated with medication. An important facilitator can be the music because with this people can listening to, moving to, and making music all seem good features to support the learning process, also, music can activate the production of dopamine. And the last one

is the exercise that releases a protein called brain derived neurotrophic factor that supports the formation of neural pathways. (MaryAnn Shaw, 2023).

2.2.2 Contribution of Neurodidactic in the Education Field

The aim of neurodidactic in education is to provide the most relevant resolution to solve the problems that can occur in the classroom in a way to get a better understanding of all the students. There are some important aspects that neuroeducation include:

- a) **Attention:** is the brain process that allows being focus on some aspects of the environment, excluding others. When you are learning is important to be able to focus on the teacher when she is explaining, and, also being concentrated on the tasks that are doing in the class.
- b) **Memory:** it is important to understand how memory works and how can make the learning more efficient. In addition, there are different techniques that people could use to strengthen their memory.
- c) **Executive control:** when people are able to plan ahead, create a sequence of mental steps or actions and to retain relevant information for brief periods of time is crucial to learning and mental performance.
- d) **Social behavior:** sometimes you need the support of other people to learn, to get that experience, that provides positivism in students live and that will make the children being more generous and empathic with their classmates.
- e) **Neurodiversity:** there are kids with different learning needs such as ADHD (attention deficit hyperactivity disorder), dyscalculia (difficulty in making calculations), dyslexia (confusing letters or numbers) and so on. If educators

understand these learning needs would be easier to apply new strategies in the classroom. (Anne-Laure Le Cunff, 2022).

2.2.2.1 Teacher's role in preschool since neuroscience

Neuroscience knowledge positively influences teachers, increasing thinking, deep knowledge, and connections in real-world problems. Furthermore, the way they teach can change, too, because they will understand more their students and they could look for strategies to apply in the classroom.

Preschool educators take responsibility of carry out the teaching process learning that students acquire knowledge, important characteristics for their personal development, how to relate with others, control their emotions, solve problems and so on.

Teachers have a fundamental role in preschool for that reason when they decide to apply neuroscience in their classroom, they become a neuroeducator which means “a professional with good knowledge about the human brain that would allow him to analyze and criticize teaching programs that are based on neuroscience”. (Mora, 2014).

For being a neuroeducator, educators should learn about it, takes training because it would be easy if they just read something about it. Moreover, it would be essential that preschool teachers receive training about this method because in this way, they will learn about new concepts, will understand better the brain of their students, and learn techniques to apply in the classroom.

Finally, neuroeducation explains that the role of teachers in early childhood is to mediate between the learning content proposed by the curriculum and the interests and needs of children; thus, favoring the construction of their learning. (Mora, 2014).

2.2.2.2 Neuromyths

Neuromyths are misinterpretations of how the brain and mind function. There is a false hypothesis about the development brain. Here are some common myths.

Some people say that some humans have a “left-brained” and other “right-brained” but that is not true those are hemispheres of the brain that work together. There is no evidence one hemisphere is more dominant than the other. Furthermore, learning arises from changes in the connections between brain cells and not for the addition of new cells to the brain. (Bergland, 2017).

Brain development has not finished by the time children reach development, its development continues well into adolescence and adulthood, especially the development of the frontal lobes, which are important for decision-making.

A person cannot just use 10 percent of the brain, a healthy person uses 100 percent of his or her brain. Besides, the brain is active 24 hours a day, whether people are sleeping or awake, the only thing that changes is the patterns of brain activity shift when we are sleeping. (Bergland, 2017).

According to Fragkaki (2022), the last myth is that one of the hemispheres is dominant. Most people believe that logic is located in the left hemisphere and creativity in the right hemisphere; the truth is that there is a “hemispheric asymmetry” between the two hemispheres. Thus, scholars’ left hemisphere is responsible for intellectual, rational, verbal, and logical thinking, while the right hemisphere is responsible for creative, intuitive, and study processes.

As previously seen, there are some neuromyths that people can think are true, but the reality is that there are false or vice versa. For this reason, there is important to investigate to understand better what is happening in our brain because there would be discovered things that there was no idea about. Furthermore, there are multiple intelligences that are part of the different factors of the brain.

There are different learning styles as visual, auditory and kinesthetic learners. However, there are differences in students' preferences for learning and receiving information. For example, some pay attention to teachers' presentations while others prefer to read books. In fact, people learn using multiple senses and not only one.

2.2.3 Selective Attention

Focused or selective attention is when a child can stay focused on a task simultaneously is paying attention to the distractions in the environment. They bounce from one activity to another or being easily drawn in by the noise of the car going by, for example. (Willard, 2022).

A child needs to be able to screen distractions like noises in the hallway, classmates talking, someone tapping some object and so on. They need to be able to listen to the teacher and complete tasks despite the other things going on in the environment.

2.2.3.1 Theories of selective attention.

There are two theories about selective attention that predict people cannot consciously attend to all human sensory input at the same time.

Broadbent's Filter Model

It explained information from all the stimuli presented at any time enters an unlimited capacity sensory. And it is further processed by being allowed to pass through a filter. The objective of Broadbent was to see how people were able to focus their attention and do that through an experiment. (Mcleod, 2023).

He did an experiment called "Split-span" also known as the dichotic listening task. It consists that one person is sending one message to a person's right ear and a different message to their left ear. Then, the participants were asked to listen to both messages simultaneously and repeat the message that they heard. (The message is consisting of 3 words).

The purpose of Broadbent was to know how the message would be repeated back, know if the participants repeat the message back how he said it. Finally, he discovered that people made fewer mistakes repeating back ear by ear.

Treisman's Attenuation Model

What is different from this model to the previous is that it attenuates rather than eliminates the unattended material. That means if you have four sources of sound in one room you can turn down or attenuate three to attend to the fourth.

In their experiments demonstrated that participants could identify the contents of an unattended message, indicating that people were able to process the meaning of both the attended and unattended messages. (Mcleod, 2023).

2.2.3.2 Causes of lack of focused attention in childhood

In the classroom there are students who do not pay attention, take a long time to finish the tasks, if the teacher calls him or her, he or she does not listen to or perhaps does not follow the instructions because do not remember them. There are some causes that students that make children struggle to pay attention in class:

- a) **Anxiety:** if a child is not focusing on school could have chronic worries that teachers are not aware of and that tends to lock up the brain, making school hard. Some kids are extremely worried about making a mistake or embarrassing themselves so when the teacher is calling on them, they may try to disappear. Besides, when it takes more time than usual do to finish his or her work in class it is because he or she is struggling with perfectionism.
- b) **Obsessive-compulsive disorder (OCD):** kids with this disorder have obsessive thoughts, try to prevent bad things from happening or feel that necessary to fix something.
- c) **Stress or Trauma:** kids who have experience some kind of violence or other disturbing experiences may demonstrate difficulty paying attention. Also, kids whose home lives involve stress may develop these symptoms.
- d) **Learning Disorders:** when a child looks like he or she does not understand perhaps is because is getting distracted by something or is avoiding completing the assignment. If he or she is passing the pages but looks at how he or she has no idea what the page is looking for could be a possible cause of learning disorder. (Bubrick & Howard, 2023).

- e) **ADHD Predominantly Inattentive type:** kids with this type tend to be highly distractible and they may have the propensity to daydream or drift during conversations.
- f) **ADHD Predominantly Hyperactive/Impulsive type:** they tend to act as if driven by a motor, they may move around constantly, fidget or bump into things, being impulsively, making decisions that they soon regret.
- g) **ADHD Combined type:** kids with this combined type are inattentive, hyperactive and impulsive. They may have a very hard time sitting still and following instructions in school. (Willard, 2022).

2.2.3.3 Indications of lack of focused attention in childhood.

There are some indications that help educators to identify when a child has lack focused attention:

- a) **Off task:** the child plays with the pencil or a toy instead of completing the task or the homework.
- b) **Easily distracted:** the kid hears someone walking by the classroom or hears any sound and he or she will become distracted.
- c) **Internally focused:** he or she may get lost in their own thoughts.
- d) **Bouncing between activities:** when students start their task and they think of something funny or something they are concern about, they will be distracted.
- e) **Drifting off:** when he or she may be quickly drawn away from the focus of the activity.

- f) **Having trouble finishing homework or tasks:** they might avoid doing their homework or in they are in school they will have issues finishing any task that they start.
- g) **Working slowly:** they may work slowly on tasks because they are constantly fighting off distractions. (Willard, 2022).

2.2.4 Factors that affect the learning process

There are some important factors that affect the learning process of the students, some of them are:

- a) **Environmental factor:** if the student takes the learning in a place where he or she does not feel good, that will complicate the process of learning. For example, the classroom, the textbooks that they used, the equipment that they have in the classroom and the school supplies.
- b) **Teacher's personality:** the way teachers interact with their students is essential for the learning process because that will help to determine how will be the relationship between teachers-children.
- c) **Emotional and social factors:** there is fundamental that learners get friends in the school because it will motivate them to go there, and they will learn values such as cooperation, empathy, respect and so on.
- d) **Mental factors:** children do not have to get concerned about adult's situations, the most important is if they get mental health those will make the achievement of the students increase and they will tend to develop their potential and abilities. Also, their behavior will depend on the situation they are getting.

- e) **Physical factors:** those will help learners how to increase their learning, get better behavior, understanding, create good relationships with their classmates and learn how to work as a teamwork.
- f) **Learning factors:** educators know that all students learn in different ways, so it is important to have different techniques o methods in a way that all of them learn because if there is just one way to do it, there is probably that some learners do not understand. (Mondal, 2023).

2.2.5 Neurodidactic applications in the classroom.

According to Eric Jensen (2014), there are some tips on how to get the most out of the brain during the learning process and using neurodidactic in the classroom:

- a. **Physical Education** it will regulate students' behavior, raise good chemical for thinking, focus, learning and memory and it will make that the brain makes efficient connections. They could do activities such as walks, games, running, dance, aerobics, swimming and so on.
- b. **Social Conditions** school behaviors are influenced by social experiences, looking for a sense of reward acceptance, pleasure, coherence and if there are poor social conditions would be pain, sadness and stress. For those reasons are important do activities when they work as teamwork.
- c. **The brain changes** children's brain is changing every day they attend school. Activities doing at schools can be influenced positively students' processes through meditation, reading, arts and building thinking skills. To improve it teach attentional skills, memory skills and processing skills using different apps or programs.

- d. **Chronic Stress** it is a very issue at schools for educators and staff. This issue could have serious health, learning and behavior risks. Also, it can affect attendance, memory, social skills and cognition. Teachers can look for activities that help to reduce the impact of stressors.
- e. **Differentiated Education** it has been pushed as a strategy to deal with the differences in learners, but the reality is it will do the contrary effect. Educators should allow kids to celebrate diversity, unique abilities, talents and interests.
- f. **Excessive Content** can saturate memory, hindering the learning process. For that reason, teachers should teach in parts, process the learning and then rest the brain because if they teach in big chunks it would be difficult to process. Some activities that they can apply are breaks, recess and downtime.
- g. **Artistic Training** has a positive impact on learning, they show certain arts boost attention, working memory and visual-spatial skills. Arts are also related to dance, drama and theater to encourage social skills, empathy, timing, patience and verbal memory. Supporting kids to practice some art will help them to develop their brain effectively.
- h. **Emotions** influence learning, for that is important to teach the appropriate emotional and social skills to improve student performance. Doing activities that help the management of emotions in the classroom will improve the social skills of kids.
- i. **Delays in Learning** autism, dyslexia and others can be overcome thanks to the plasticity of the brain. Teachers should learn the latest in dealing with special education learning delay recovery and explain to their students the importance of understanding the needs that all of them have.

- j. Continuous Practice** use several strategies to continually strengthen memory over time instead of assuming that once learned, the memory is preserved. Educators should review at least two days after the explanation so that students process the knowledge.

CHAPTER III
METHODOLOGICAL FRAMEWORK

This section develops the methodological part of the research, when there are important aspects, such as type of research, temporal dimension, framework, sources of information, hypothesis, nature, character, subject of study, sampling, and type and what are the techniques and instruments to effectively collect information.

3.1 Type of research

3.1.1 Purpose

a) Applied Research

According to Urmita (2023) “it is a way that helps to find solutions to specific research problems. Also, it goes straight to find those solutions.” It means that the objective is to find better solutions to the problem of this investigation in order to improve the knowledge of the students.

The type of research of this investigation is applied because the gathering of information will be developed in the classroom with students with selective attention of 5-year-old of this institution. Furthermore, the purpose of finding solutions to this problem is that the condition of all the students will be favorable because there will be new strategies that teachers can apply in their classes.

3.1.2 Temporal dimension

a) Transversal

“Transversal investigation is that in which the information is obtained from the object of study; that means from the population or the sample only once at a given time”. (Bernal, 2010).

This investigation is transversal because the problem is developed during a specific period and not in long term. Moreover, this dimension has the purpose of analyzing in depth or detail the topic or the problem of this research, since how are the students in the classroom until the techniques that could be applied by the educators.

3.1.3 Framework

When there is talk about mega it is related to the place where the institution is placed, when it is macro there are all the students of the institution and finally micro includes just the students taking into consideration for the investigation.

a) Micro

According to Tatomir (2022), “micro is fundamental in an investigation because it contributes to the reader to easily understand the ideas of the research and get the attention of the viewers”.

The research framework of this research is micro because the investigator considers a specific number of students of the institution. The objective of this study is to examine the development of a micro population of students will selective attention in their learning English process.

3.1.4 Sources of information

Table 1

Firsthand sources used in the research process.

Author	University or organizations	Country	Year
	Sek International School	Costa Rica	2023
Jolles J.	Sec. Educational Psychology	United States	2021
Donald J. Ford.	Training Industry	United States	2011
Bubrick J	Child Mind Institute	United States	2023

Source: Developed by Valeria Sánchez Rojas (2023).

Table 2

Secondhand sources used in the research process.

Author	Book Title	Year
Tatomir J.	Elements of Space Design in Graphic Design	2022
Jensen E.	Top 10 Brain-Based Teaching Strategies	2014
Bernal C.	Metodología de la Investigación	2010

Source: Developed by Valeria Sánchez Rojas (2023).

Table 3

Thirdhand sources used in the research process.

Author	Article	Year
Willard M.	Focus Attention Skills in Childhood	2023
Summak S.	Building the connection between mind, brain and educational practice; roadblocks and some prospects	2010
Fragkaki M.	Higher Education Faculty Perceptions and Needs on Neuroeducation	2022
Bergland C.	Debunking Neuromyths: Eight Common Brain Myths Set Straight	2017

Source: Developed by Valeria Sánchez Rojas (2023).

3.1.5 Hypothesis

A hypothesis is a statement that will be evaluated by the investigator, it is a prediction answer to the research question. (McCombes, 2022).

After implement neurodidactic strategies to students with selective attention, they will improve their speaking English learning process.

Specific Objectives	Variable	Conceptual Definition	Instrumental Definition	Operacional Definition
To recognize the neurodidactic strategies used in the English learning process of	Strategies used by teachers.	Plan to achieve something.	Surveys	It is based on a questionnaire for the purpose of obtaining

children with selective attention of 5-year-old.				information from people.
To distinguish the areas that strengthen the process of learning English of children.	English learning areas of children.	Skills that integrate kids' learning.	Interview	Establish direct contact with the people who are considered sources of information.
To identify the benefits/advantages of the implementation of neurodidactic strategies during the Speaking English learning process.	Benefits or advantages while applying a new methodology in the class.		Document analysis	It is based on bibliographic records whose purpose is to analyze printed material.
To propose different methods which integrate neurodidactic in	Techniques to improve the students' learning.	Ways used in a particular area of study.	Observation	It allows direct and reliable information to be obtained.

the learning process of students.				
--------------------------------------	--	--	--	--

3.1.6 Nature

a) **Mixed**

This investigation is mixed nature, in which there are used both nature qualitative and quantitative in order to achieve the goals. “An investigation is considered qualitative if its way to collect data does not involve collecting and analyzing non-numerical data” (Bhandari, 2022). In this case, doing observation to some teachers is a method to collect data.

In relation with the “quantitative section is because it gets the process of gathering and analyzing numerical data” (Bhandari, 2022). It applies an interview to some preschool teachers in a way to know if they get some knowledge about neurodidactic. Then, with the information create a survey with the results gathered.

3.1.7 Character

a) **Exploratory**

According to George (2023) Exploratory research is when the researcher investigates research questions that have not previously been studied. In this case, this investigation is considered exploratory because there is examine the problem and since there starts the whole process of investigation about the problem.

b) **Descriptive**

According to McCombes (2022), “Descriptive research has the purpose to describe in an accurately way the situation by using a variety of techniques to investigate the problem. In this research, there is the objective to apply different instruments in order to collect information to get the solution of the problem.

3.2 The subject of study

3.2.1 Population

There are the whole students of the group that the researcher wants to do conclusions about (Bhandari, 2022). In this case, the population of this research are preschool students at SEK International School.

3.2.2 Sample

Based on Bhandari (2022) a sample is the specific group that the research collects data from. Its size is less than the total size of the population. The sample for this research is the students with selective attention of 5-year-old during their speaking English learning process from SEK International School.

Moreover, the educators who work with these children will be participating in this research. There are three teachers who have some of these students in their classes.

a) **Non-Probabilistic**

The type of this sample is non-probabilistic because just some of the students were considered for their participation in this research and not all the students of the institution had the same chance for participate.

According to Fleetwood D. (2023), non-probability is a method or technique in which the investigator selects samples based on the objective, it is not random selection.

3.3 Techniques and instruments

To get the objective of this investigation, the research has used a variety of techniques to collect important information such as document analysis, interview, survey, and observation.

3.3.1 Interview

Bernal (2010) says: The interview aims is to establish direct contact with the people who are considered sources of information. Its purpose is to obtain more information to obtain deep data for the investigation.

For this, it is important to create simple interview questions and a good environment to provide to the interviewee a great moment where he or she will feel comfortable at the time to answer the questions doing for the interviewer. This technique is used as a diagnostic and it will be applied to the teachers with students with selective attention. The purpose of this technique is to know if preschool teachers have some knowledge about neuroscience, neurodidactic and the ways they can implement it in their classes. Also, with this, the research will know how teachers teach to children with selective attention.

3.3.2 Observation

Direct observation allows direct and reliable information to be obtained, as long as it is done through a systematized and highly controlled procedure. (Bernal, 2010).

There is a way to observe the development of children in the classroom and how is their behavior in the moment the educator is explaining some topic or when they are doing some activities.

The aim of this technique is to observe the evolution of the class, and how the students get involved in the different activities that the teacher prepares for them without making inferences in there in order to collect detailed information for this research.

3.3.3 Survey

According to Bernal (2010) survey is one of the most used data collection techniques, it is based on a questionnaire that is prepared for the purpose of obtaining information from people.

The purpose of using this technique is to know what those activities or actions are that students like during the time they are in the school in a way to improve their learning.

3.3.4 Document Analysis

Document analysis is a technique based on bibliographic records whose purpose is to analyze printed material. It is used in the elaboration of the theoretical framework of the research.

In this case, this technique has been used in the previous chapter which is about the Methodological Framework where there is found all the information about this investigation.

CHAPTER IV
DATA ANALYSIS AND INTERPRETATION

This section consists of the analysis and interpretation of data collected by the instruments of interview, observation, and survey about the knowledge or neurodidactic in the education field.

4.1 Analysis of Instrument N°1 Interview

To obtain the results to know if preschool teachers have some knowledge about neuroscience, neurodidactic and the ways they can implement it in their classes, the interview uses as an instrument that was applied to three teachers who have in their classes students with selective attention. The information collected is presented through tables in order to have all the data more ordered.

Table 1

1. Do you know what is neuroeducation? Explain what you know.

Teacher 1	Teacher 2	Teacher 3
Yes, it is a field that combines the principles of neuroscience with those of education to improve the way we teach and learn.	Yes, it is the knowledge and functioning of the brain to apply it to teaching.	No.

Source: Answers from participating teachers (2023)

For this question, the teachers were asked about what neuroeducation is for them, there is notice that most of them have an idea what it is. The teachers respond

that it is a combination of neuroscience with education and at the same time knowing how the brain function with the objective to apply it in the education field.

Table 2

2. Do you know the difference between neuroeducation and neurodidactic? If so, what is the difference?

Teacher 1	Teacher 2	Teacher 3
<p>Yes, neuroeducation and neurodidactics are related fields, but they have different focuses. Neuroeducation is the field that combines neuroscience and education to improve teaching and learning. Neurodidactic, on the other hand, is a more specific approach that focuses on the practical application of neuroscience in the classroom.</p>	<p>Yes, neuroeducation is the knowledge of the brain to apply it to teaching. Neurodidactic apply knowledge for educational planning</p>	<p>No.</p>

Source: Answers from participating teachers (2023)

In the case of this question, the educators were asked to answer about the difference between neuroeducation and neurodidactic. Two of them explained that neuroeducation is the combination of neuroscience and education and how the brain works. Additionally, they said neurodidactic is the practical application of neuroscience in the classroom from the time educators do the planning. How it is noticed some of them have noticed it.

Table 3

3. Do you apply some strategies to your students with selective attention? Is so, which are those strategies?

Teacher 1	Teacher 2	Teacher 3
<p>Yes, I provide clear and concise instructions</p> <ul style="list-style-type: none"> - Use visuals aids - Use multisensory approaches (Incorporate different sensory modalities such as touch, sound, and movement to engage multiple areas of the brain and increase attention). - Use positive reinforcement - Reduce distractions 	<p>Yes, attracting their attention,</p> <ul style="list-style-type: none"> - Approaching the student - Sometimes sitting next to the kids 	<p>No.</p>

Source: Answers from participating teachers (2023)

Related to this question that was about the application of strategies to students with selective or focalized attention and most of them said they apply some strategies. How there is mention previously they apply strategies so that means that they are getting benefits with those techniques during the English lessons, so without any doubt, those teachers are doing a great job to support their students in the learning of a second language.

Table 4

4. Do you know about the implementation of neurodidactic strategies in your classes?

Teacher 1	Teacher 2	Teacher 3
Yes	Yes	No. I would like to know some strategies that I could apply with my students.

Source: Answers from participating teachers (2023)

As there is notice in the answers, most of them have some knowledge about the implementation of strategies in the classroom and one of them has no idea but she would like to learn more about it in a way to support their learners. So, they are interested in learning more about neurodidactic strategies that they can apply in their lessons taking advantage of their benefits to improve the learning of the students.

Table 5

5. Do you think your students with selective or focalized attention are academically successful? Why do you think so?

Teacher 1	Teacher 2	Teacher 3
<p>Yes, it is possible for students with selective or focalized attention to be academically successful. While selective attention can be a challenge in certain academic tasks, students with this type of attention can stand out in areas that interest them or that allow for hands-on or project-based learning. Additionally, with the right support and strategies, students with selective or focalized attention can learn to focus their attention and stay on task.</p>	<p>Yes, because I think they have the correct abilities to do it.</p>	<p>Yes, because instead in some cases they look as they are not paying attention, they know everything what they are learning.</p>

Source: Answers from participating teachers (2023)

For this question, there is notice that those educators believe that their students can do great things. In addition, they are open to get strategies that they can apply in their classrooms with children with selective or focalized attention and at the same new strategies could be applied to all the students in the class.

Table 6

6. Do you think if you apply neurodidactic strategies in your classroom, your students will be benefited? How will they be benefited?

Teacher 1	Teacher 2	Teacher 3
Yes, neurodidactic strategies benefit students by making learning more effective, enjoyable, and memorable. By considering how the brain processes information, teachers can create instruction and activities that better align.	Yes, since the key will be focused on the specific and concrete needs of each student.	Yes, new strategies into the class will bring new goal achievements to the students.

Source: Answers from participating teachers (2023)

In the case of this question, educators explained that they think if they applied neurodidactic strategies that would benefit to their students, will make the learning more effective, enjoyable, and memorable and will bring new goal achievement to their students.

Table 7

7. Would you be interested in learning more about neurodidactic strategies that you could apply in your lessons? Why?

Teacher 1	Teacher 2	Teacher 3
Yes, because neurodidactic strategies can help teachers create more positive and engaging classroom experiences that promote learning and academic success.	Yes, for the benefit of the students.	Yes, I would like to learn new strategies and be more actualized in this topic.

Source: Answers from participating teachers (2023)

Related to this question, educators are open to learn more about the neurodidactic in order to improve the learning of their students in the English classes what facilitates the development of the lessons. In conclusion, it is necessary that teachers can implement strategies, apps or different materials during their lessons to see the progress of their learners during the school year.

Table 8

8. Is there anything else you would like to know more about?

Teacher 1	Teacher 2	Teacher 3
I would like to know how students' brain function	Education in these times focuses its attention on	It Is a trending topic that can bring benefits to my

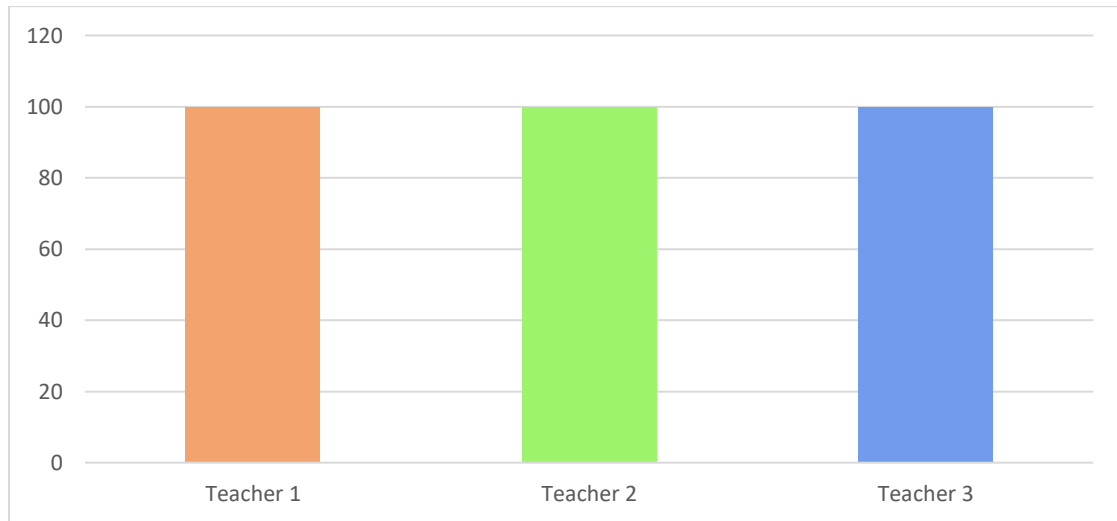
and how they learn math, specifically basic operations (3-6 years).	the knowledge of the people's brain structure, this will allow the teacher to be more accurate in teaching.	students and into my teaching strategies.
---	---	---

Source: Answers from participating teachers (2023)

According to the answers obtained from the teachers, they want to learn more this innovative topic because it is important to know the function of the brain of children in order to support the educators to be more accurate at the time to do plannings and how to apply those new techniques to the students with selective attention and at the same time those strategies could be applied to all students in the classroom.

4.2 Analysis of instrument N°2 Observation

To get more information about how children with selective attention works in their classes, the observation was used as an instrument that was applied to three teachers who have in their class students with selective or focalized attention. The information collected is presented through graphs in order to have all the data more ordered.

Graph 1**Create playful and collaborative environments facilitating the development of learning.**

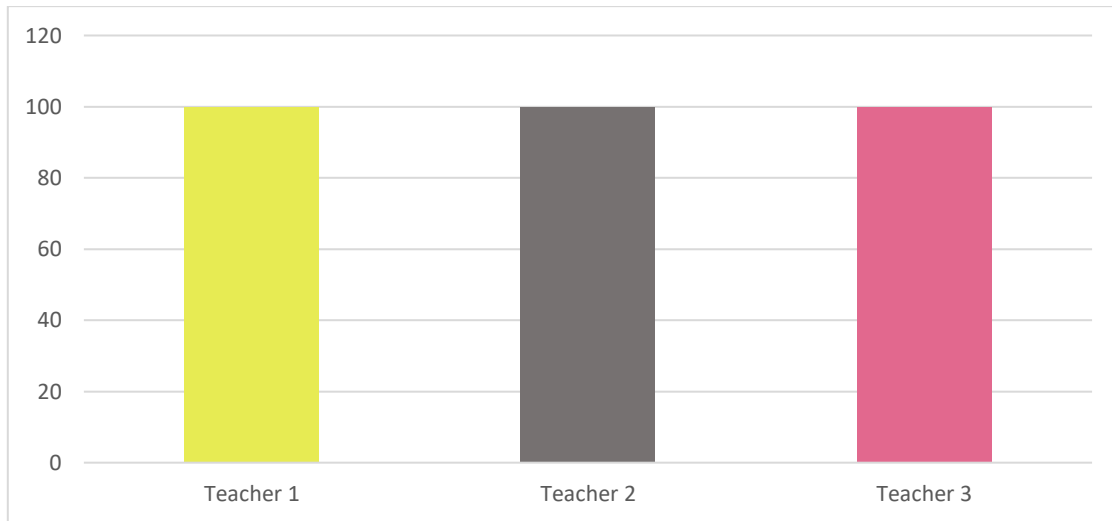
Source: Data obtained by observation to teachers (2023)

It is observed that all teachers always create playful and collaborative environments facilitating the development of learning of their students, implementing new activities knowing their abilities, where children develop their skills which are essential tools for their future.

In the observations done there was observed children are seat by tables of two or three students what make a collaborative environment because if someone needs something their classmates can help him or her. Furthermore, the educator does activities in which students have to work as a team and it will improve their social abilities.

Graph 2

Use different interactive resources (videos, platforms, etc.) for the development of class content.



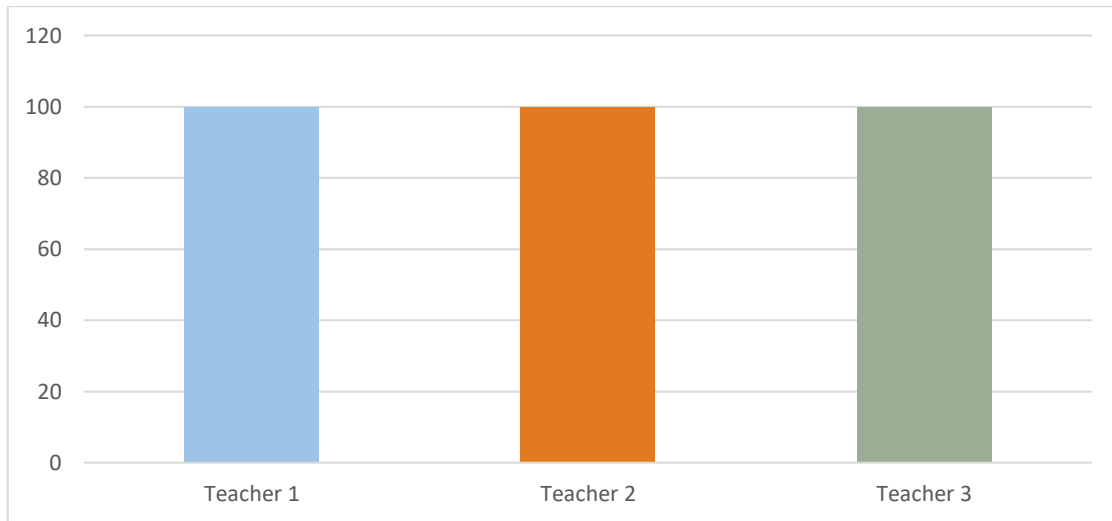
Source: Data obtained by observation to teachers (2023)

It is observed all teachers use different interactive resources for the development of their class content. They are learning new methods to apply in their classroom because if educators do not learn the students will not improve their learning.

In the observations done, there was observed teachers use different resources in their lessons. For example, they use iPad, online games, educational material, interactive boards, screen, videos, Interactive stories, music, and so on. How it is noticed there is a variety of activities and resources that could be applied in their lessons to improve the English learning of children.

Graph 3

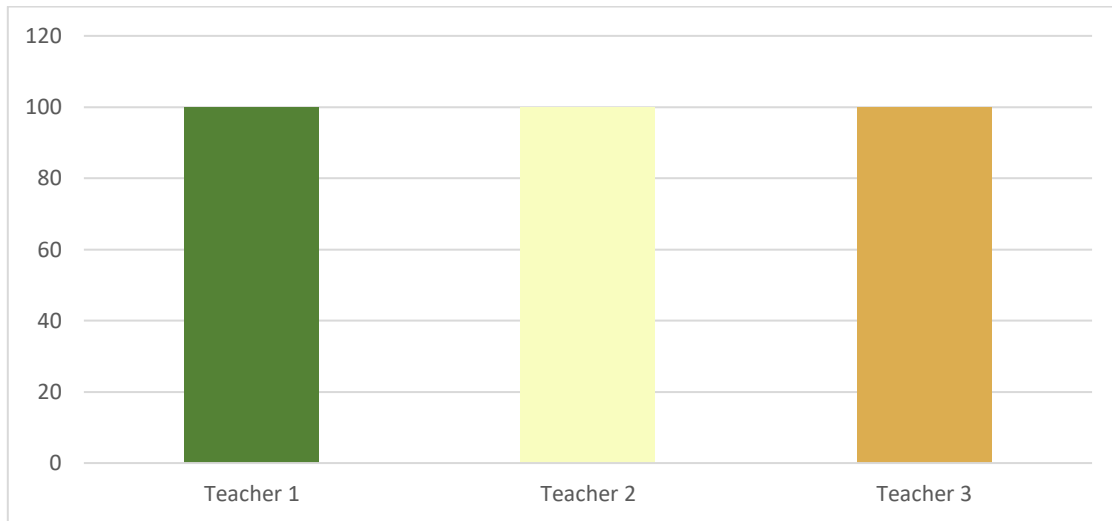
Keeping students motivated, valuing their understanding of the topics and their active participation in class.



Source: Data obtained by observation to teachers (2023)

It is observed that all teachers keep students motivated, value their understanding of the new topics and their active participation in class. The most important is they feel important, part of their group and confident to be active in the class.

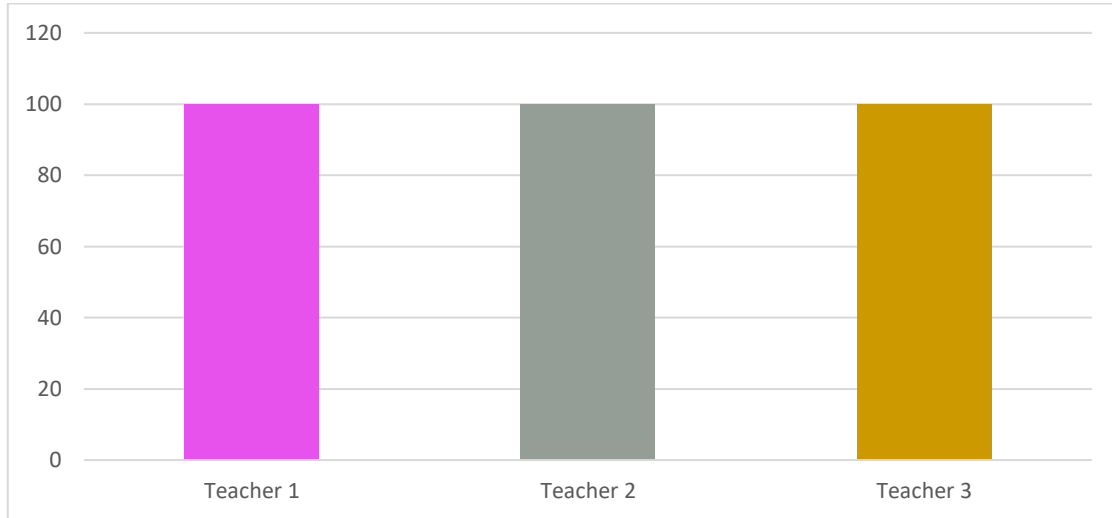
In the observations done there was observed children are motivated for their teachers, they get a compliment, and they create different activities to break the routine which looks awesome for them because at least one day at week they receive like a “surprise” what makes their interest in the class increase.

Graph 4**Students work collaboratively to improve their learning during the lessons.**

Source: Data obtained by observation to teachers (2023)

It is observed that all teachers said that their students work collaboratively to improve their learning during the lessons, and that is because they feel motivated thanks to the support they receive from their teachers. Furthermore, how they are more mature than at the beginning of the school year, they have acknowledged that teamwork can simplify tasks and help them reach their goals in a faster way.

In the observations done, there was observed children help their classmates, when someone does not understand something or is doing something incorrectly and that is so nice because they are capable of creating that kind of relationship with other instead make fun of the situation.

Graph 5**Supporting their students to correcting their mistakes during the lessons**

Source: Data obtained by observation to teachers (2023)

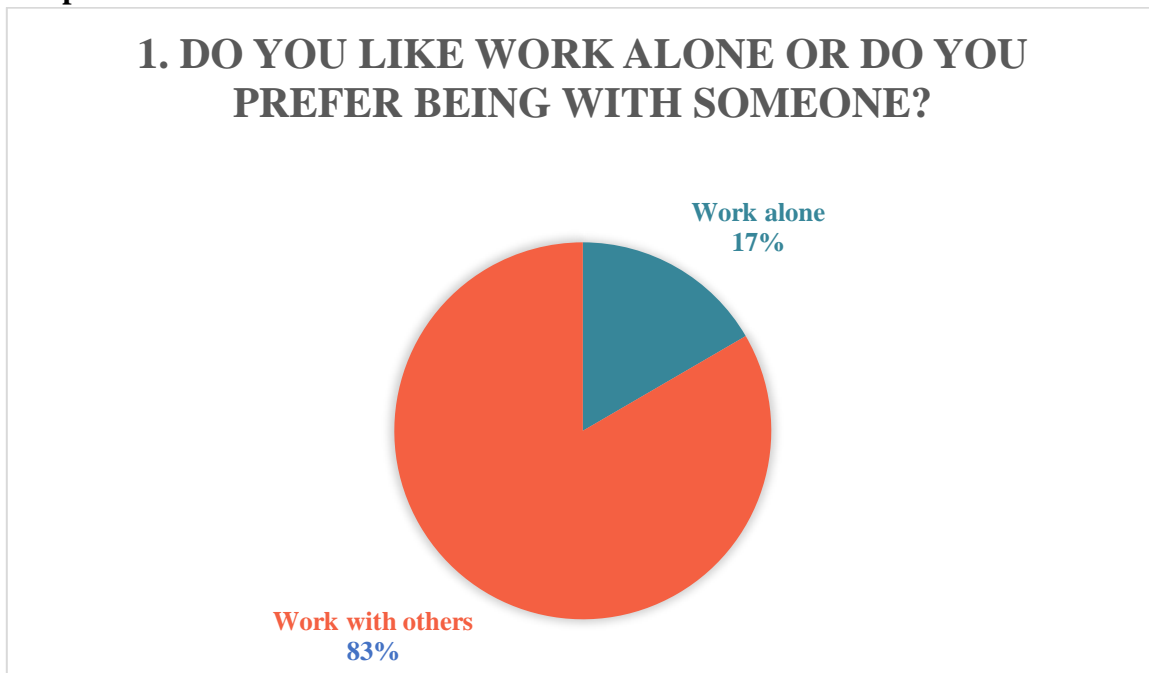
It is observed that all teachers support their students in correcting their mistakes during the lessons, what it looks correct because in this way the students are learning, too.

In the observations done there was observed they educators apply two different kind of support to their students to correct their mistakes. For example, the first one is to let them recognize mistakes by themselves if the teacher sees that they continue without resolving the problem she tries to guide them to the correct path. The second kind is the teacher just shows to the students the mistakes and they fix them.

4.3 Analysis of instrument N°3 Survey

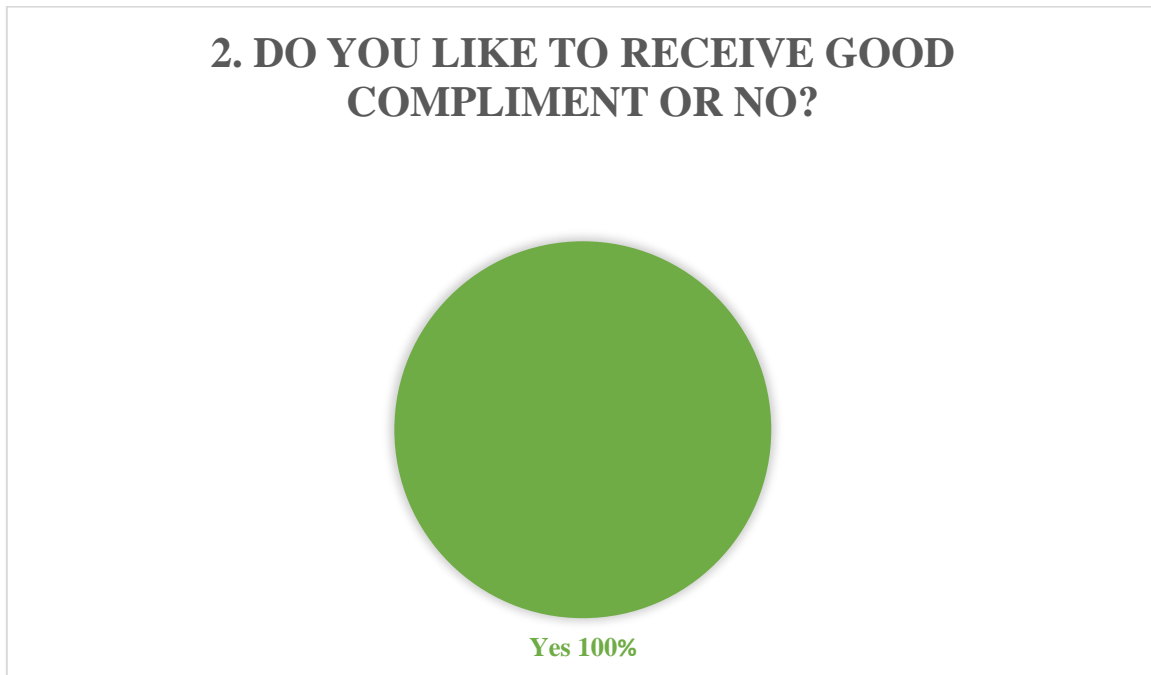
To obtain data about what students prefer during their time in the institution there were asked some questions that will be presented through graphs in order to have all the data more ordered and understand better the preferences of the learners with the objective to improve their learning.

Graph 6



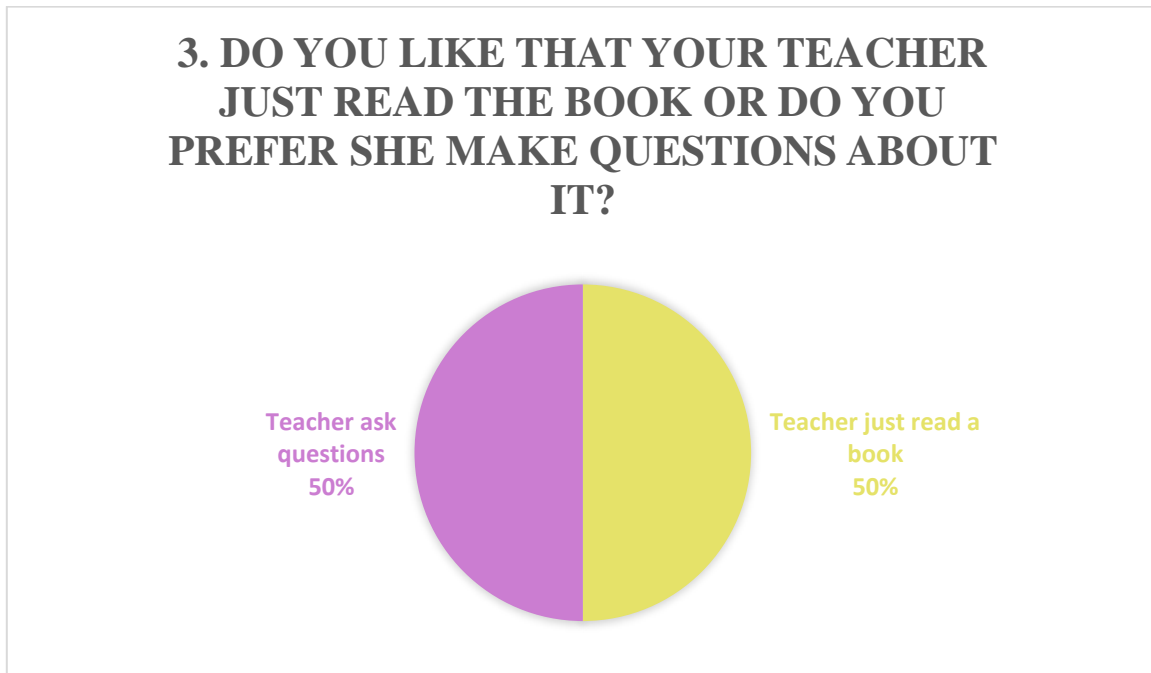
Source: Data obtained by a survey from the students (2023)

In relation to the graph, 83% of the students prefer working with someone else because they like to share with their classmates and if they need something they asked to them. 17% of the population prefer working alone because prefer doing things by themselves.

Graph 7

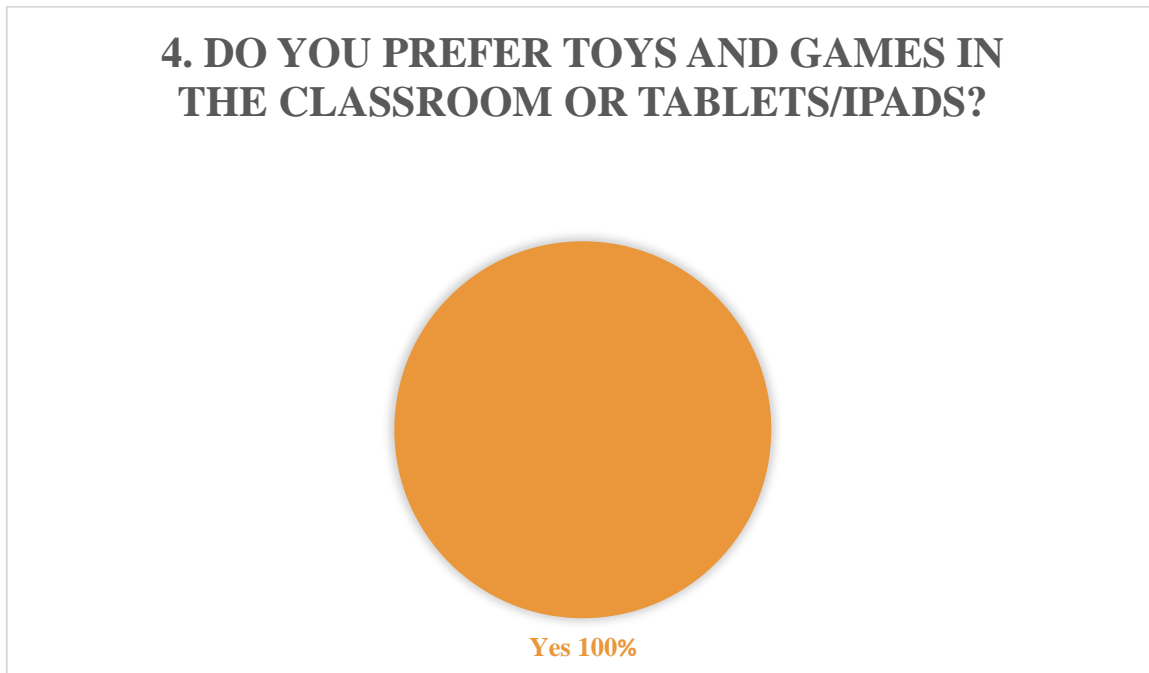
Source: Data obtained by a survey from the students (2023)

It is observed that all students like to receive good compliments from their teachers while they are doing some activity during the classes. Also, I asked them why they like to receive compliments and they told me they feel happy when someone says them compliments like “I like how you are working”, “You are coloring so nice”, and so on.

Graph 8

Source: Data obtained by a survey from the students (2023)

It is observed that half of the students prefer teachers just read a book because they do not know what the teacher is reading, or they are not paying attention. The other half like when teachers ask questions because they like to participate because they love the stories.

Graph 9

Source: Data obtained by a survey from the students (2023)

In relation to the data obtained, it is observed that all students prefer tablets or iPads instead of toys and games, that would be because they are more related with technology and it could be a good resource for them to learn, since educators can create games in a way learners learn using the iPad.

CHAPTER V
CONCLUSION AND RECOMMENDATION

5.1 Conclusions

This section refers to the conclusions of this research which are based on the specific objectives and information collected through the research instruments.

There is an important connection between neuroscience and education that together make the term “neuroeducation” because both are important to understand the ways and characteristics of the brain and how it learns. Since the previous term come out the neurodidactic that is a methodology that teachers use in their classes to understand how the brain of their students learn, how their social conditions are and how their abilities can influence in their English learning process.

Moreover, teachers have an important role in the teaching-learning process of children because they should support them in a positive way, help them to grow up, control their emotions, think or look for different techniques to apply in the class and so on. So, all teachers could take training related to neuroeducation, and the learning of children would be more enriching.

When there is talk about selective attention is fundamental to understand that it is when people do not focus on one thing, they pay attention to all de distractions in their around. For that reason, with this research, it was understood the causes, the indications that help educators to identify when a student has lack of focused attention and the factors that affect the learning process.

Based on the general objective; to analyze the impact of Using Neurodidactic Strategies to Improve the Speaking English Learning Process of Children with Selective

Attention. The investigation generates a series of specific objectives; according to the specific objective number one to recognize the neurodidactic strategies used in the English learning process of children with selective attention of 5-year-old. According to the results of the research instruments teachers apply some strategies with their students with focalized attention, such as support, motivation, different techniques, or ways to learn the contents and so on.

According to the specific objective number two to distinguish the areas that strengthen the process of learning English of children there was created a survey to identify them, on children with focalized attention on 5-year-old on the institution with the objective to know some aspects to create the different methods that teachers can apply in their lessons. Realizing those features it made that the techniques created by the researcher would be successful.

According to the specific objective number three to identify the benefits/advantages of the implementation of neurodidactic strategies during the Speaking English learning process there was observed how the teachers who have students with selective attention implement strategies with those kids to get better learning. There are important emphasized people cannot learn something new unless what is going to be learned motivates and get relevant for children.

According to the specific objective number four the most important aspect that there is to propose different methods which integrate neurodidactic in the learning process of these students, that will influence positively in the learning of children with selective attention because if they do not feel comfortable talking in English or for any factor, these

techniques will help them to do it and at the same time their learning will be more enriching.

With the strategies done by the researcher, the English learning of the students will increase considerably. It is expected that educators take it into account to apply them in their classrooms.

5.2 Recommendations

This section refers to the recommendations based on the information collected through the research instruments.

There are some recommendations that could be interesting for teachers because it is important to invent new strategies to facilitate the English learning process of students. At the same time, the idea for students to be motivated to pay attention to the teacher and to learn what they are studying in that moment.

It is fundamental to carry out neurodidactic strategies to promote learning for the development of children because in that way they will have a better future in their academic area as much as in their daily life.

It is recommended that educators use as many neurodidactic strategies as possible, so their students will increase their knowledge. Simultaneously, applying different kind of activities will get a better understanding and they will feel motivated in the classroom.

Reinforce the proposal of neurodidactic strategies on children with selective attention but also on children in preschool because it explains how the learning process

occurs, so teachers must be informed about new methods to use in their lessons to enrich their children.

Finally, the most important recommendation is educators to take constantly training for being updated about methods and different techniques they can apply to their students in their lessons to get a better understanding of English.

CHAPTER VI
PROPOSAL

This chapter refers to the proposal to be shared to teachers with the objective that can be implemented with the students with selective attention on SEK International School in Curridabat, San José, using neurodidactic strategies. Based on neurodidactic strategies, it is intended children improve their English learning process during their lessons what makes educators take advantage of the time of their classes. At the same time, it is expected that teachers and kids have knowledge of the use of neurodidactic strategies that will help them in their teaching-learning process and support them at any moment.

6.1 General Objective

- a) To provide neurodidactic strategies that improve the Speaking English learning process of children with selective attention from Sek International School.

6.2 Specific Objectives

- a) To demonstrate the importance of taking training to learn different methodologies to apply with the learners.
- b) To motivate kids by using new strategies that support them during their time in the classroom.
- c) To apply neurodidactic strategies proposed by the researcher that can benefit children.

6.3 Neurodidactic Strategies

- A. **Get excited:** this strategy is fundamental because when kids are motivated about what they are learning, they get interested in the topic they are learning that day, their concern into pay attention in the classroom increase. If educators

take the time to know the interests of their students, it would be easier for them while they are planning because they know what kind of activities can do to get the interest of the learners.

- B. **Cooperative work:** if students work cooperatively their social skills will improve because they will work together to achieve a common goal, they must exchange their ideas, learn about teamwork, get patience to listen to their classmates and wait for their turn to speak or to do something.
- C. **Working by projects:** this strategy demonstrates that kids are capable of working independently and simultaneously working as a teamwork, because the objective is most of the time they work with their classmates, to learn how to work with other people and not just alone, if they have some trouble they can support into others and that they improve their communication skills. Also, it is important they discover their surroundings, they develop new abilities and learn how to solve problems.
- D. **Learning by doing:** it helps learn concepts by doing, increase their building skills, being more confident and independent because they are learning by themselves and they work with any previous experience. The objective is that students learn by doing things by themselves, when they do something by themselves it is likely to remember it than just read about that topic, at the same time the retention of children will increase, and they will understand how something that they did not know currently works.
- E. **Brain breaks:** teachers do quick activities to engage children in physical activities but there is not necessary a lot of equipment just one or two materials; depending on the activity. There are a variety of brain breaks that educators can

apply in their lessons; for example, look up for a video on YouTube or play a game where children should follow some instructions, the objective is that after some time being in a class, they enjoy doing something unexpected.

- F. **Experiments:** this strategy is interesting for kids because it is something that they do not usually do, it will help them to increase their curiosity and the desire to explore something new. So, there is a way to motivate students to do different activities in the classroom and not only learn with the materials that are in the class. Furthermore, they can find more interesting the world around them, and it helps to discover new things and develop different skills.
- G. **Playful activities:** it works to stimulate the imagination, to improve their confidence, also, it makes children interested in the topic learning about. For example, if there is a student who has difficulty to learn words, teachers can create playful games that help children to recognize the letters in order to achieve the recognition of the words.
- H. **Handwriting with fun:** this strategy consists to know the interest of the students, when teachers know their interests it would be easier to understand them, so for example, if the kid does not want to color, you can think of something they like, like planets so you can decorate each pencil with a planet that way it will be motivated for them coloring because they are using something that they like. Its aim is to improve their fine motor skills since how to learn coloring, tracing, writing letters and so on.
- I. **Quiet critters:** this is an activity that helps to keep kids working quietly and they are made of pom-pom and googly eyes. It consists of a quiet critter appears on the table of the students while they are working in silence, if there are some

noises the quiet critter will disappear, and they will be back to the jar. Educators can discuss that they come out while everybody is quiet because they do not like noises or being played with. To make it funnier each student can create their quiet critter.

References

- Andrea. (2013). *Los cinco pilares fundamentales de la neurodidáctica*.
<http://neuropsicopedagogia.com.ar/los-cinco-pilares-fundamentales-de-la-neurodidactica/#:~:text=Los%20a%C3%B1os%20previos%20a%20la,que%20se%20cierra%20muy%20pronto.>
- Anne-Laure Le Cunff. (2022). *Neuroeducation: exploring the potential of brain-based education* <https://nesslabs.com/neuroeducation>
- Astheimer, L., Sanders, L. (2011). *Temporally selective attention supports speech processing in 3- to 5-year-old children, 2011*. Developmental Cognitive Neuroscience. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6987661/>
- Bergland.C. (2017). *Debunking Neuromyths: Eight Common Brain Myths Set Straight*.
<https://www.psychologytoday.com/us/blog/the-athletes-way/201708/debunking-neuromyths-eight-common-brain-myths-set-straight>
- Bernal C. (2010). *Metodología de la Investigación 3ªed. Bogotá: Ed. Pearson*.
<https://abacoenred.com/wp-content/uploads/2019/02/El-proyecto-de-investigaci%C3%B3n-F.G.-Arias-2012-pdf.pdf>
- Bhandari (2022). *What is Quantitative Research? Definition, Uses & Methods*.
<https://www.scribbr.com/methodology/quantitative-research/>
- Bhandari (2022). *Population vs Sample Definitions, Differences & Examples*.
<https://www.scribbr.com/methodology/population-vs-sample/#:~:text=A%20population%20is%20the%20entire,t%20always%20refer%20to%20people.>

Bubrick J., Howard J. (2023) *Not all Attention Problems are ADHD*

<https://childmind.org/article/not-all-attention-problems-are-adhd/#:~:text=A%20number%20of%20different%20challenges,child%20the%20support%20they%20need>

Casey, A. (2020). *What is neurodidactics?*. Smartick.

<https://www.smartick.com/blog/parents-and-teachers/psychology/what-is-neurodidactics/#:~:text=Benefits%20of%20Neurodidactics,be%20used%20in%20the%20classroom.>

Donald J. Ford. (July 20, 2011). *How the Brain Learns*.

<https://trainingindustry.com/articles/content-development/how-the-brain-learns/>

Fleetwood D. (2023). *Non-Probability Sampling: Types, Examples, & Advantages*.

<https://www.questionpro.com/blog/non-probability-sampling/>

Fragkaki M. (2022). *Higher Education Faculty Perceptions and Needs on Neuroeducation*

in Teaching and Learning. <https://www.mdpi.com/2227-7102/12/10/707>

George (2023). *Exploratory Research Definition, Guide, & Examples*.

<https://www.scribbr.com/methodology/exploratory-research/#:~:text=Exploratory%20research%20is%20a%20methodology,can%20be%20quantitative%20as%20well.>

Harappa School Leadership. (December 31, 2020). *What is Selective Attention?*

<https://harappa.education/harappa-diaries/selective-attention/>

Jensen E. (2014) *10 Most Effective Tips for Using Brain Based Teaching & Learning.*

<http://www.jensenlearning.com/wp-content/uploads/2016/07/10MostEffectiveTips.pdf>

MaryAnn Shaw (2023) *Neuroplasticity: What does it mean for educators?*

<https://www.n2y.com/blog/neuroplasticity-for-educators/>

McCombes S. (2022) *Descriptive Research Definition, Types, Methods & Examples.*

<https://www.scribbr.com/methodology/descriptive-research/#:~:text=Descriptive%20research%20aims%20to%20accurately,investigate%20one%20or%20more%20variables.>

McCombes S. (2022). *How to Write a Strong Hypothesis Steps & Examples.*

<https://www.scribbr.com/methodology/hypothesis/>

Saúl Mcleod. (2023) *Theories of Selective Attention* <https://simplypsychology.org/attention-models.html>

Mondal P. (2023) *7 Important Factors that may Affect the Learning Process*

<https://www.yourarticlelibrary.com/learning/7-important-factors-that-may-affect-the-learning-process/6064>

Mora F. (2014) *Neuroeducator: A new University career?*

https://www.huffingtonpost.es/francisco-mora/neuroeducador-una-nueva_b_5238524.html

Jensen E. (2014) *10 Most Effective Tips for Using Brain Based Teaching & Learning.*

<http://www.jensenlearning.com/wp-content/uploads/2016/07/10MostEffectiveTips.pdf>

Sec. Educational Psychology (December 3, 2021). *On Neuroeducation: Why and How to Improve Neuroscientific Literacy in Educational Professionals.*

<https://www.frontiersin.org/articles/10.3389/fpsyg.2021.752151/full>

Sek International School (1892). *Educative Project* <https://sekquito.com/proyecto-educativo/>

Sek International School (2023). *School History* <https://sekcostarica.com/historia-del-colegio/>

Semih Summak (December, 2010). *Building the connection between mind, brain and educational practice; roadblocks and some prospects.*

https://www.researchgate.net/publication/229125583_Building_the_connection_between_mind_brain_and_educational_practice_roadblocks_and_some_prospects

Tatomir (2022) *Elements of Space Design in Graphic Design.*

<https://study.com/learn/lesson/elements-of-space-graphic-design.html>

Urmita L. (2023). *Applied Research: Definition, Types & Examples.*

<https://www.questionpro.com/blog/applied-research/#:~:text=What%20is%20applied%20research%3F,goes%20straight%20to%20finding%20solutions.>

Vakil, E., Blachstein, H., Sheinman, M., Greenstein, Y. (2009). *Child*

Neuropsychology. <https://www.tandfonline.com/journals/ncny20>

Willard M. (July 2nd, 2022) *Focused Attention Skills in Childhood*

<https://cadey.co/articles/focused-attention>

ANNEXES

Annex 1**Instrument****Interview**

1. Do you know what is neuroeducation? Explain what you know.

Yes ____ No _____

2. Do you know the difference between neuroeducation and neurodidactic? If so, what is the difference?

Yes ____ No _____

3. Do you apply some strategies to your students with selective attention? Is so, which are those strategies?

Yes ____ No _____

4. Do you know about the implementation of neurodidactic strategies in your classes?

Yes _____ No_____

5. Do you think your students with selective or focalized attention are academically successful? Why do you think so?

Yes _____ No_____

6. Do you think if you apply neurodidactic strategies in your classroom, your students will be benefited? How will they be benefited?

Yes _____ No_____

7. Would you be interested in learning more about neurodidactic strategies that you could apply in your lessons? Why?

Yes _____ No_____

8. Is there anything else you would like to know more about?

Annex 2**Instrument****Observation**

Indicator	Always	Sometimes	Almost never	Comments
Create playful and collaborative environments facilitating the development of learning				
Use different interactive resources (videos, platforms, etc.) for the development of class content				
Keeping students motivated, valuing their understanding of the topics and their				

active participation in class				
Students work collaboratively to improve their learning during the lessons				
Supporting their students to correct their mistakes during the lessons				

Annex 3**Instrument****Survey**

1. Do you like work alone or do you prefer being with someone?



()



()

2. Do you like to receive good compliment or no?



()



()

3. Do you like that your teacher just read the book or do you prefer she make questions about it?



()



()

4. Do you prefer toys and games in the classroom or tablets/Ipads?



()



()



**UNIVERSIDAD HISPANOAMERICANA
CENTRO DE INFORMACION TECNOLOGICO (CENIT)
CARTA DE AUTORIZACIÓN DE LOS AUTORES PARA LA CONSULTA, LA
REPRODUCCION PARCIAL O TOTAL Y PUBLICACIÓN ELECTRÓNICA
DE LOS TRABAJOS FINALES DE GRADUACION**

San José, viernes, 28 de julio de 2023.

Señores:


Universidad Hispanoamericana
Centro de Información Tecnológico (CENIT)

Estimados Señores:

El suscrito (a) Maria Valeria Sánchez Rojas, con número de identificación 117080340, autor (a) del trabajo de graduación titulado *The Impact of Using Neurodidactic Strategies to Improve the Speaking English Learning Process of Children with Selective Attention on 5-year-old Children from Sek International School during the Second Quarter of 2023*, presentado y aprobado en el año 2023 como requisito para optar por el título de Licenciatura en Preescolar Bilingüe, SÍ / NO autorizo al Centro de Información Tecnológico (CENIT) para que con fines académicos, muestre a la comunidad universitaria la producción intelectual contenida en este documento.

De conformidad con lo establecido en la Ley sobre Derechos de Autor y Derechos Conexos N° 6683, Asamblea Legislativa de la República de Costa Rica.

Cordialmente,



Valeria Sánchez Rojas
1-1708-0340