



**UNIVERSIDAD LAICA ELOY ALFARO DE MANABÍ**  
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**PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANJEROS**

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**TÍTULO:**

La incidencia de la lengua de señas en la adquisición del idioma español

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## **TUTOR CERTIFICATION**

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### **CERTIFICATION**

The present degree work called: “La incidencia de la lengua de señas en la adquisición del Idioma Español” has been exhaustively reviewed in several work sessions. It has been concluded and it is ready for its defense.

The options and concepts expressed in this degree work are the results of the perseverance and originality of its author: Jossenka Maricela Muñoz Flecher, being her sole responsibility.

Chone, December 2024



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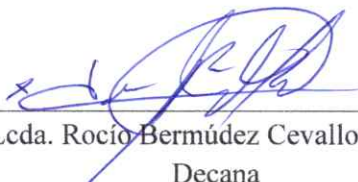
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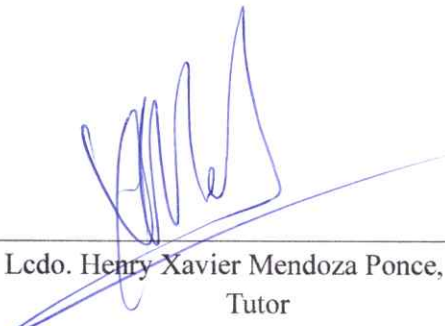
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## **PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANJEROS**

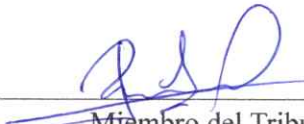
Los miembros del Tribunal Examinador, aprueban el informe de proceso de solicitud de Artículo científico sobre el tema La incidencia de la lengua de señas en la adquisición del Idioma Español del año lectivo 2025, elaborado por la estudiante Jossenka Maricela Muñoz Flecher.

Chone, December 2024

  
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## **Dedication**

To my dear mother, for being the fundamental pillar of my life. Your unconditional love, your sacrifices, and your constant encouragement have guided me every step of this path. Thank you for teaching me the value of perseverance and for always being by my side, giving me the support I needed to move forward.

To my grandmother, whose wisdom and tenderness are an invaluable legacy. Your example of strength and dedication has inspired me to be better every day. I appreciate every story and advice you have shared with me, as they have left a permanent mark on my heart.

To my family, who has been my refuge and my greatest source of motivation. Their trust in me and their unconditional love have pushed me to overcome obstacles and achieve my goals. Each of you has contributed to forming the person I am today, and for that I am eternally grateful.

To those special people who have illuminated my path, your support has been an invaluable gift. Thank you for being there in moments of joy and in moments of difficulty, your presence has made my life richer and more meaningful.

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To my teachers and my tutor, for their guidance, wisdom and dedication. Thank you for inspiring me to explore new ideas and for providing me with the support I need to achieve my goals. His commitment to my education has been invaluable and I will always carry his teachings with gratitude.

With a deep sense of gratitude and affection, I dedicate this thesis to all of you, who have been an essential part of my story and this important achievement.

## **Acknowledgment**

I want to express my most sincere gratitude to all the people who have been fundamental in the completion of this work.

First of all, to my mother and my grandmother, for their unconditional love, their constant support and for being my greatest source of inspiration throughout this path.

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**TITLE:** The impact of sign languages on the acquisition of the Spanish Language.

**TÍTULO:** La incidencia de la lengua de señas en la adquisición del Idioma Español.

### **Abstract**

This article examines the role of sign language in the acquisition of Spanish, focusing on its impact on learners with diverse communication needs. Also, the study aims to evaluate how sign language supports or challenges Spanish learning, addressing both deaf and hearing individuals who use it as a primary or complementary communication tool. Through literature review and empirical data analysis, the research identifies sign language as a facilitator for understanding Spanish among deaf learners, while also enhancing vocabulary and grammar acquisition for hearing students. In addition, key findings highlight the cognitive benefits of sign language, such as improved linguistic comprehension and bilingualism. The results emphasize its dual function: as a bridge to Spanish for deaf individuals and an innovative educational tool for hearing learners. Moreover, integrating sign language in language instruction fosters inclusive and effective learning environments. On the other hand, the study concludes that incorporating sign language into Spanish education enhances linguistic outcomes and promotes equitable access to language acquisition. But also, recommendations include the adoption of sign language as a pedagogical strategy to support diverse learners in achieving Spanish proficiency.

**Keywords:** sign language, Spanish language acquisition, cognitive benefits, inclusive education, pedagogical strategies.

### **Resumen:**

Este artículo examina el papel de la lengua de señas en la adquisición del español, centrándose en su impacto en estudiantes con diversas necesidades de comunicación. Además, el estudio tiene como objetivo evaluar cómo la lengua de señas apoya o desafía el aprendizaje del español, abordando tanto a personas sordas como oyentes que la utilizan como herramienta primaria o complementaria de comunicación. A través de una revisión de la literatura y un análisis de datos empíricos, la investigación identifica la lengua de señas como un facilitador para la comprensión del español en estudiantes sordos, al tiempo que mejora la adquisición de vocabulario y gramática en estudiantes oyentes. Asimismo, los hallazgos clave destacan los beneficios cognitivos de la lengua de señas, como una mejor comprensión lingüística y el desarrollo del bilingüismo. Los resultados subrayan su doble función: como puente hacia el español para las personas sordas y como herramienta educativa innovadora para los estudiantes oyentes. Además, la integración de la lengua de señas en la enseñanza del idioma fomenta entornos de aprendizaje inclusivos y efectivos. Por otro lado, el estudio concluye que incorporar la lengua de señas en la educación del español mejora los resultados lingüísticos y promueve el acceso equitativo a la adquisición del idioma. También se incluyen recomendaciones para adoptar la lengua de señas como estrategia pedagógica para apoyar a estudiantes diversos en la consecución de la competencia en español.

**Palabras clave:** lengua de señas, adquisición del Idioma Español, beneficios cognitivos, educación inclusiva, estrategias pedagógicas.



## Introduction

The interplay between different forms of communication and their impact on language learning has long fascinated educators and researchers. As (Krausneker, 2008) "Sign language is a natural language for many deaf and hearing people. It has its own structure, grammar and rules. In many countries, sign languages have got the status of first language for the deaf."

In line with Krausneker, sign language serves as a natural language for numerous deaf and hearing individuals, possessing its unique structure, grammar, and rules. Also, it is importance that teachers use pedagogical strategies to motivate and to create an inclusive environment to achieve that students deaf can work with the activities. In addition, sign language plays a dual role: it is a fundamental medium for interaction among the deaf and hard of hearing, and it serves as a dynamic pedagogical tool for hearing learners. Likewise, with its comprehensive visual-spatial nature, provides a unique and potent medium that can enhance the language acquisition process. It offers an engaging and multi-sensory approach that supports a wide range of learners, from young children to adults.

Sign language appears an easier mode of communication between the teacher and the students, intrinsically the students get involved more keenly in learning and acquisition of new information and literacy as well. According to (Tang and Yang, 2007)

On the reported by authors, emphasize that sign language enhances teacher-student communication and fosters active student engagement in learning. This supports the idea that sign language improves vocabulary and grammar acquisition while creating inclusive learning environments. Besides, facilitating accessibility and active participation, the citation reinforces the hypothesis that integrating sign language into Spanish curricula can enhance linguistic outcomes and promote equitable education for diverse learners.

The object of this project is to evaluate the impact of sign languages on Spanish language acquisition with a particular focus on accessibility, learning strategies, and active participation, and their impact on students using inclusive activities. The specific objectives of this study are to analyze the accessibility to pedagogical tools utilized to develop the skills communication of the students, to identify how these tools influence students' active participation in their learning process, and to capacity to express their ideas through the interaction students and teacher and to determine the impact of these strategies to improve the communication of the students and the acquisition of vocabulary to develop the Spanish

language skills. This will establish solid and substantiated conclusions about the role of learning strategies in improving the acquisition of Spanish language learning.

The object of study is the effectiveness of learning strategies in Spanish acquisition. The field of study encompasses education and language acquisition. The research methodology selected to address the specific objectives proposed has been meticulously designed to effectively collect data and answer the research questions. Besides, a mixed methodology combining quantitative and qualitative approaches has been chosen to obtain a comprehensive understanding of the activities of Spanish language acquisition. Also, the mixed approach is a process that collects, analyzes, and links quantitative and qualitative data in a single study or a series of investigations to answer a question. Given the objective of determining the effectiveness of learning strategies and understanding how they influence the acquisition of the Spanish language; exploratory research was selected. This approach is employed when the objective is to determine a topic or research problem that has been little studied, is in doubt, or has not been addressed before.

The study population is constituted by Oasis School. The sample includes teachers the school, and 2 students of the seven years. Data will be collected through interviews and surveys. The interviews will yield detailed qualitative data regarding teachers' learning strategies for the acquisition of the sign Spanish language. In contrast, the surveys will provide quantitative data from students, which will assist in measuring the effectiveness and satisfaction of these strategies in Spanish language acquisition.

## **LITERATURE REVIEW**

### **Pedagogical strategies for integrating sign language in education.**

Pedagogical strategies for integrating sign are very important as allow the teacher can use activities according to the students and develop the acquisition of knowledge through learning strategies in the classroom. As stated by (Souza, 2015) suggest that: “in terms of educational technology, knowledge acquisition in students can be improved through the fusion of 3 academic activities with interactive, collaborative and immersive technologies”.

In line with (Kusters et al, 2017) “In deaf-hearing interaction the alignment of resources is more complex and precarious”. They point out the precarious nature of aligning resources to meet diverse communication needs, stressing the importance of strategic planning and adaptability. Also, analysis underscores the need for targeted training and support for educators, ensuring that sign language integration is effective in bridging communication gaps and fostering equitable learning experiences for both deaf and hearing students.

In mentioned by (Pena et al. (2005) and Pena and Porto (2008) ) “observed that student-teachers were motivated to adopt CLIL in their future practices.” They explore the motivational factors influencing student-teachers’ adoption of Content and Language Integrated Learning (CLIL) methodologies. Their findings suggest that educators are eager to embrace innovative approaches like sign language integration when aligned with inclusive strategies. This motivation highlights the potential for embedding sign language within CLIL frameworks, providing a multilingual and multimodal pathway to support effective language acquisition and promote inclusive education practices.

### **Role of sign language in fostering inclusivity in classrooms.**

Sign language plays an essential role in fostering inclusivity in classrooms by breaking communication barriers for deaf and hard-of-hearing students. However, its implementation requires adequate teacher training, resources, and school-wide commitment to ensure integration inclusivity for all students.

According to (McDermid, 2018) “Educators should also be aware of the different modes of interpreting, including translation, consecutive and simultaneous.” Highlights the importance of understanding various interpreting modes, such as translation, consecutive, and

simultaneous, in fostering inclusivity in classrooms. But also, this approach ensures effective communication and supports deaf and hard-of-hearing students. Besides, the need for educators to be proficient in these techniques, reinforcing the critical role of teacher training in implementing sign language as a tool to create inclusive, accessible learning environments for all students.

In mentioned by (Langer, 2007) “Educational interpreters must also be content experts across numerous disciplines.” Underscores the dual role of educational interpreters as both communication facilitators and content experts across multiple disciplines. In addition, this dual expertise is vital in ensuring that deaf students receive equitable access to diverse subject matter. Langer’s analysis emphasizes that inclusivity in classrooms hinges not only on sign language implementation but also on the comprehensive skill set of interpreters to bridge linguistic and content gaps effectively.

In line with (Murray et. al, 2002) put forth the idea that “deaf schools and other congregated spaces with deaf students and teachers that support collective identity and cultural development and provide bilingual education can often provide a more inclusive education than mainstream or ‘regular’ classrooms”. Argue that deaf schools and congregated spaces uniquely foster inclusivity by supporting collective identity, cultural development, and bilingual education. Besides, these environments often provide a more inclusive and supportive framework compared to mainstream classrooms. Their perspective highlights the importance of creating specialized spaces where sign language is central, ensuring that inclusivity goes beyond access to education and fosters a sense of belonging and cultural affirmation.

### **Cognitive benefits of using sign language as a teaching tool.**

Using sign language as a teaching tool enhances cognitive development by improving memory, spatial awareness, and multitasking skills. It promotes bilingual advantages, fostering problem-solving and critical thinking.

As (Giezen et al, 2015) there are a number of studies of whether cognitive benefits are associated with bimodal bilingualism (bilingualism in a spoken language and in a signed language). They explore the cognitive benefits of bimodal bilingualism, where both spoken and signed languages are learned. But also, this research suggests that this form of bilingualism enhances critical thinking, problem-solving, and cognitive flexibility. By engaging both visual

and auditory processing, bimodal bilingualism offers unique advantages that traditional language learning does not, leading to improvements in memory and multitasking abilities.

As reported by (Brereton, 2008) “explored sign language learning in pre-school settings, focusing on how the use of sign language in the classroom enhanced the learning community's appreciation of diversity, including appreciation of diverse language and diverse ways of communicating and appreciation of cultural diversity.” Study focuses on sign language in preschool settings, highlighting its role in promoting diversity and inclusivity. The use of sign language in classrooms not only improves communication but also fosters an appreciation of linguistic and cultural diversity. Argues that early exposure to sign language enhances social interaction, empathy, and understanding of different ways of communicating, contributing to a more inclusive learning environment.

A number of studies detail the relationship between language learning and age of exposure. Most consider the benefits on language learning of early exposure, rather than whether cognitive benefits vary depending on age of exposure. According to (Muñoz, 2006)

In mentioned by Muñoz, investigates the cognitive benefits of early exposure to sign language, suggesting that the age at which children are introduced to sign language significantly impacts language acquisition. Besides, research emphasizes that early exposure to sign language enhances cognitive development, improving language skills and memory retention.

### **Grammar learning supported by visual-kinesthetic methods.**

Visual-kinesthetic methods enhance grammar learning by engaging multiple sensory pathways, aiding comprehension and retention. Also, techniques like gesture-based activities and visual aids foster active participation, making abstract grammar rules tangible.

As (Oxford, 2011), “defined learning styles as general approaches that learners use in the learning of a subject, acquiring a language, or dealing with a difficult problem.” Oxford’s defines learning styles as broad approaches that learners utilize to acquire knowledge or tackle challenges, including language learning. In addition, emphasizes the significance of adapting teaching methods to cater to different learning styles, which can enhance the overall comprehension and retention of content.

In mentioned by (Huda, 2014) as cited in (Wulansari, 2016) “emphasizes that the VAK learning model is a multisensory learning model that engages three learning styles.” Huda says, emphasizes the effectiveness of the VAK (Visual, Auditory, Kinesthetic) learning model, which integrates three distinct learning styles into a multisensory approach. This model enhances learning by appealing to visual, auditory, and kinesthetic senses, facilitating better engagement and retention. The incorporation of visual-kinesthetic methods in grammar learning aligns with this model, making abstract grammar rules more accessible and tangible to learners by appealing to multiple senses.

According to (Lista, Atmowardoyo, Saliya, 2015) “that indicated that VAK learning model was useful to improve the students’ writing skill.” Authors highlights the effectiveness of the VAK learning model in improving students’ writing skills. Their research suggests that the multisensory approach of VAK facilitates better understanding and application of complex concepts. When applied to grammar learning, this model helps students grasp abstract grammatical rules more effectively by involving visual aids and kinesthetic activities, which improve engagement and retention.

### **Sign language as a bridge for bilingualism.**

Sign language serves as a powerful bridge for bilingualism, fostering cognitive flexibility, cultural awareness, and linguistic competence. It enhances brain functions like memory and problem-solving, benefiting both hearing and deaf individuals.

“Body language can help teachers manage the class, express their affection, and can easily handle the teaching of language knowledge at the same time.” As (Hui Yang, 2016). Highlights the importance of body language in enhancing communication in the classroom, particularly when teaching language. By incorporating sign language, teachers can simultaneously manage the class, express emotions, and convey language knowledge effectively. This approach supports bilingualism, as it helps bridge communication gaps for both hearing and deaf individuals, fostering an inclusive learning environment and enhancing students' linguistic abilities.

As reported by (Gregory, 2004), “underscore the effectiveness of a bilingual approach in education for most deaf children.” Underscores the effectiveness of a bilingual approach in education, particularly for deaf children. The research emphasizes that learning in two languages—spoken and signed—promotes cognitive flexibility and linguistic competence. But also, for deaf children, bilingualism provides a more comprehensive language development experience, supporting not only language acquisition but also social integration and cultural awareness, ultimately contributing to improved educational outcomes.

The continuum of linguistic profiles encountered among deaf bilingual’s ranges from mother tongue acquisition of one or both languages, the acquisition of one of the two languages as a second language, a partial acquisition of one or both languages to only a rudimentary acquisition of one or both languages. As (Plaza-Pust, 2005)

In line with authors, discusses the wide range of linguistic profiles found among deaf bilingual individuals, from full acquisition of both languages to partial or rudimentary understanding of one or both. Also, the study underscores that sign language serves as a vital tool in bridging linguistic gaps and promoting bilingualism, with significant cognitive and cultural benefits for deaf individuals.

### **Vocabulary development through sign language.**

Sign language supports vocabulary development by reinforcing word meanings through visual and kinesthetic cues, aiding retention and comprehension. It bridges communication gaps for diverse learners and fosters linguistic creativity.

“Communication is an ongoing dialogue between human beings. It can occur in a variety of ways. Some examples are through sight, body language and symbols.” (Graves, 2010) cited in (King & Flynn).

There are various strategies that facilitate the learning of the Spanish language in deaf children. It is also important to highlight that people who are in the same environment can use sign language as a means of communication and in this way, communication of better quality, at the same time the learning objective will be even better.

As indicated (Herman and Roy, 2006) “question whether these should be considered equivalent in terms of language acquisition. Hearing children in deaf families are likely to be

bilingual from an early age, whereas for deaf children, bilingualism is much more variable.” They highlight the bilingual experiences of hearing children in deaf families, who often learn both sign language and spoken language from an early age. For deaf children, however, bilingualism is more variable, with sign language serving as a key tool for vocabulary development. This variability necessitates different approaches to teaching and learning in order to support diverse language acquisition pathways.

“Through the use of a visual language, these children are provided opportunities for engaging in language building activities and developing knowledge about the world to which other deaf children may not have access.” As (Grosjean, 2001)

As reported by author, discusses the benefits of using sign language as a visual language that provides deaf children with opportunities to engage in language-building activities. Through these activities, deaf children gain access to knowledge about the world that might otherwise be unavailable. Besides, sign language supports vocabulary development by linking words with visual cues, enhancing understanding and retention. This allows deaf children to expand their linguistic creativity and cognitive abilities, bridging gaps in communication and fostering more meaningful learning experiences.



## **Methodology**

The research approach was qualitative and quantitative, the research techniques were: teachers' interview and survey for students' parents. The methods were inductive/deductive bibliographic. The population and sample were made up of: 2 teachers, and 2 students' legal representatives. The study was carried out to analyze the importance of Spanish language acquisition through the use of sign language to improve the teaching-learning process for hearing-impaired students in middle and upper elementary levels. In line with (Creswell & Plano Clark, 2007) mixed methods is an approach to inquiry in which the researcher links, in some way (e.g. merges, integrates, connects), both quantitative and qualitative data to provide a unified understanding of a research problem.

The institution's authorities granted permission for the research. The educational department designed and validated instruments to be used by the researchers. The collaboration and commitment of the institution's teachers were also secured.

The study was conducted in the city of Chone, in the province of Manabí, focusing on students from middle and upper elementary levels in the institution. It was found that teachers need to employ pedagogical strategies to promote the teaching-learning process in the students during their Spanish language acquisition. Moreover, the purpose of this study is to analyze the importance of using sign language in learning the Spanish language.

Additionally, a convenience sampling method was used to select inclusive institutions that were easily accessible to the researchers. This included considerations such as geographic location, time availability, and willingness to participate in the research. The data collection involved interviews and surveys at the middle and upper elementary levels, where the collected information was investigated and analyzed.

## **Results**

### **Interview for teachers**

The analysis reveals that teachers acknowledge the potential of sign language in aiding students to acquire Spanish, especially as a bridge for language acquisition. They emphasize the importance of visual and kinesthetic resources, including gestures, mimics, and interactive technological tools, to create inclusive and effective learning environments. These methods not only make abstract linguistic concepts tangible but also cater to diverse learning needs, supporting both deaf and hearing students.

As (Mayberry, 2001) contend that most deaf learners possess the potential to master sign language acquired in the visual modality as natural language. It is very important that teachers use pedagogical strategies to improve the teaching-learning of the deaf students with dynamic materials and activities that are necessary in the classroom.

However, challenges are significant. Teachers point out that many students are unfamiliar with sign language, creating barriers to its effective integration. In addition, they note that sign language has limitations in conveying complex grammatical structures, which are essential for mastering Spanish. This highlights a critical need for professional development and training to equip educators with adaptive strategies and comprehensive methodologies.

The role of empathy and innovation in teaching emerges strongly in the feedback. Teachers find that fostering inclusive communication encourages positive interactions and human connections within the classroom. Nonetheless, achieving a balance between sign language and spoken language acquisition requires structured approaches and consistent efforts.

Finally, the availability of resources, particularly technological and audiovisual tools, is deemed essential. These resources not only support comprehension and retention but also help relate prior knowledge to new linguistic concepts, promoting an active and engaging learning process. The overall analysis underscores the necessity for systemic support, targeted teacher training, and innovative resource integration to harness the full potential of sign language in acquiring Spanish.

## SURVEY OF STUDENTS

**Table 1**

*Do you consider it important to use sign language in Spanish classes?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of parents consider the use of sign language in Spanish classes very important. None view it as slightly or not important. This unanimous opinion highlights the crucial role of sign language in improving the teaching-learning process. It supports inclusive strategies, creating a dynamic and motivating environment that facilitates interaction between students and teachers.

**Table 2:**

*Do you believe that using visual resources (such as videos or images) with sign language improves your learning of Spanish?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of respondents believe that visual resources, combined with sign language, enhance their learning process. No other responses were recorded. Parents agree that tools like videos and images used alongside sign language are essential for improving classroom learning. These resources, paired with teachers' guided activities, are critical for achieving this goal.

**Table 3:**

*Would you like more support in sign language incorporated into your Spanish learning?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of parents would like more support for sign language in their Spanish learning. Other indicators had no support. This unanimity underscores the need for increased sign language

integration. Activities modeled with learning strategies are essential and should be employed by teachers.

**Table 4:**

*Do you participate in activities outside the classroom combining sign language and Spanish (e.g., book clubs, discussion groups)?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of respondents actively participate in activities outside the classroom where sign language is combined with Spanish. Indicators for "little" or "none" received no support. Parents unanimously agree these activities are crucial for promoting meaningful learning. Book clubs and discussion groups allow interaction and acquisition of new vocabulary and phrases in Spanish using sign language.

**Table 5:**

*Do you think sign language facilitates your learning of Spanish?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of parents believe that sign language greatly facilitates their learning of Spanish. No responses were recorded for "little" or "none." Parents unanimously recognize that sign language is essential in their learning process, as it supports communication skills crucial for language acquisition.

**Table 6:**

*Do you consider teacher training in sign language sufficient to support Spanish learning?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of parents believe teacher training in sign language is adequate to enhance the learning process. Other indicators received no support. Unanimously, parents stress that teacher

preparation in sign language is crucial for a more effective Spanish learning process, enabling students to acquire new essential skills.

**Table 7:**

*Do you think there are sufficient resources integrating sign language and Spanish teaching?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of parents believe there are many resources available that integrate sign language into Spanish teaching. No support was recorded for "little" or "none." Parents unanimously agree that these resources are essential for improving the learning process.

**Table 8:**

*Do you think sign language helps children with hearing impairments improve their learning skills?*

Alternatives	Quantity	Percentage
A lot	2	100%
Little	0	0%
None	0	0%
<b>Total</b>	<b>2</b>	<b>100%</b>

100% of parents believe that sign language greatly improves the learning skills of children with hearing impairments. Other indicators received no support. Parents unanimously recognize that sign language is crucial for developing new knowledge in Spanish, facilitated through teacher interaction and activity modeling.

## Conclusions

- a. Integrating sign language into Spanish language learning significantly aids vocabulary acquisition. The visual and kinesthetic aspects of signing provide clear and memorable associations for words, making it easier for learners, especially those with hearing impairments, to pick up and retain new Spanish terms. Therefore, the use of this language helps learners to better understand Spanish grammar. The distinctive structure and syntax of sign language contrasts with those of Spanish, offering a unique perspective that can clarify complex grammatical concepts and foster a more intuitive understanding of sentence construction.
- b. Incorporating sign language into Spanish language instruction enhances cognitive development. The process of learning and using a visual language stimulates different areas of the brain, enhancing general cognitive abilities, such as memory, attention and problem-solving skills, which are beneficial for mastering any new language.
- c. Sign language is a valuable tool for inclusive education, as it adapts to diverse learning styles and needs. It provides an alternative method of communication that can bridge the gaps for students with auditory processing problems or learning difficulties, ensuring that they receive the support they need to succeed in acquiring Spanish language skills.

## Recommendations

- a. To maximize the benefits of sign language in Spanish language learning, educators should develop integrated curricula that explicitly connect sign language vocabulary with Spanish grammar and syntax. Teacher training programs must emphasize the contrastive analysis between the two languages, enabling educators to highlight linguistic structures effectively. Additionally, implementing interactive and multimodal teaching resources, such as digital platforms or collaborative activities, will strengthen the link between vocabulary acquisition and grammatical comprehension, promoting deeper language mastery for all learners.
- b. Educational programs should incorporate sign language learning as part of a broader strategy to stimulate cognitive development in language acquisition. This can be achieved by designing activities that merge sign language with memory-enhancing exercises and problem-solving tasks. For instance, teachers can employ gamified learning platforms or real-world problem scenarios that require the use of both spoken and signed Spanish. This approach leverages the cognitive benefits of bilingualism and visual-kinesthetic engagement, fostering comprehensive intellectual growth alongside language proficiency.
- c. Schools should adopt inclusive education policies that prioritize the integration of sign language into their Spanish instruction frameworks. This includes ensuring accessibility to sign language interpreters, developing inclusive teaching materials, and providing workshops for educators on adaptive teaching methodologies. Furthermore, collaborative learning environments, such as peer teaching or inclusive group discussions, should be encouraged to bridge communication gaps and promote mutual understanding. These measures will empower students with diverse needs to thrive academically and socially, creating equitable opportunities for language acquisition.

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