



Ciencia Latina
Internacional

Ciencia Latina Revista Científica Multidisciplinar, Ciudad de México, México.
ISSN 2707-2207 / ISSN 2707-2215 (en línea), noviembre-diciembre 2024,
Volumen 8, Número 6.

https://doi.org/10.37811/cl_rcm.v8i6

THE IMPACT OF SIGN LANGUAGE ON SPANISH LANGUAGE ACQUISITION

**EL IMPACTO DE LA LENGUA DE SEÑAS EN LA
ADQUISICIÓN DEL ESPAÑOL**

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The impact of sign language on Spanish language acquisition

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ABSTRACT

The present research article examines the role of sign language in the acquisition of the Spanish language through the teaching of sign language at the high school level. It focuses on a sample of high school students from a private institution in the city of Chone. Additionally, a descriptive approach was employed, centered on the scientific tasks of research and the respective sampling method. For data collection, two interviews were conducted with English teachers, and a survey was applied to an English teacher. The results indicate that the acquisition of the Spanish language through the use of sign language is significant for students. Moreover, the use of pedagogical strategies is essential to help them develop their communicative skills. On the other hand, it is important for teachers to use visual resources to ensure active participation from students. Consequently, the findings highlight factors influencing the learning and acquisition of the Spanish language through the use of sign language. In other words, this study contributes to educational research by providing relevant information about the importance of Spanish language acquisition for students with hearing impairments.

Keywords: sign language, Spanish language acquisition, resources, strategies, participation

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El impacto de la lengua de señas en la adquisición del español

RESUMEN

El presente artículo de investigación examina el papel de la lengua de señas en la adquisición del idioma español con la enseñanza de la lengua de señas en el nivel bachillerato. Además, se enfoca en la muestra de los estudiantes del bachillerato de una institución privada de la ciudad de Chone. Asimismo, se empleó el enfoque descriptivo, que está centrado en las tareas científicas de investigación y el respectivo método de muestreo, a la vez, para la respectiva recolección de datos se aplicaron dos entrevistas a docentes de inglés, y dos encuestas a padres de familia de la institución. Los resultados indican que la adquisición del idioma español a través del uso de la lengua de señas es importante en los estudiantes, además, el uso de estrategias pedagógicas para lograr ellos puedan desarrollar sus habilidades comunicativas. Por otra parte, es importante que los docentes usen recursos visuales para lograr una participación activa por parte de los estudiantes. Por consiguiente, los hallazgos resaltan factores que inciden en el aprendizaje y adquisición del idioma español con el uso de la lengua de señas. En otras palabras, este estudio favorece a la investigación educativa porque proporciona información relevante para conocer la importancia que tiene la adquisición del idioma español en estudiantes con discapacidades auditivas.

Palabras clave: lengua de señas, adquisición del Idioma Español, recursos, estrategias, participación



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.

Krausneker says, 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.

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. (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. Furthermore, after reviewing articles related to the topic and identifying how crucial the acquisition of the Spanish language is through the use of sign language, the question arose: How important is the role of Spanish language acquisition through the use of sign language in developing Spanish language learning in students?

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. In fact, 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. Due to, 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. For this reason, 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. As a result, 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. As a matter, 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). Moreover, 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. Furthermore, 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 say's 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.

As (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. That is to say, 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). Above all, 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. In fact, 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. By the way, 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)

In other words, 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

This research utilized a descriptive method with qualitative and quantitative approaches, employing data collection techniques such as an interview with two professionals in the educational field, specifically in the area of English. Additionally, a survey was conducted with two mothers of students in middle and upper elementary levels. 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

Results of interview

Interview

From the population interviewed (two secondary and higher education teachers), the following main ideas were identified:

Question 1: Adaptive and effective strategies are crucial for teaching English in an inclusive context.

Question 2: It is necessary to employ adaptive strategies such as the use of varied methods and visual resources, but it is also important to strengthen teacher training to improve the teaching-learning process.

Question 3: It refers to the approaches that teachers use to focus their teaching with pedagogical innovation as a solution to face the challenges

Question 4: The teacher promotes inclusion and equitable learning with a structured and consistent approach to sign language integration to achieve a balance between sign language and the English language.

Question 5: The benefits of using sign language in teaching English are highlighted, but from different perspectives.

Question 6: Focus on written assessment and practical activities, which allows for the measurement of formal and structural language skills.

Question 7: Through sign language, empathy and human relationships are fostered in the classroom among students.

Question 8: Innovation and the creation of learning strategies by teachers is important because it demonstrates an approach focused on the role of the educator.

SURVEY OF PARENTS OF FAMILY

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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher



The total of the parents of family considers the use of sign language in Spanish classes very important. None view it as slightly or not important. Also, the essential 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. 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.

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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

100% of parent's family believe that visual resources, combined with sign language, enhance their learning process. No other responses were recorded. Also, they 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 importance 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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

The total of the parents consider that 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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

100% of the parents consider that 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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

The total of the 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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

100% of the parents consider that teacher training in sign language is adequate to enhance the learning process. In addition, 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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

The total of the parents believes there are many resources available that integrate sign language into Spanish teaching. Also, 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%
Total	2	100%

Source: Oasis High School

Prepared by: Jossenka Flecher

100% of the parents consider 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.

DISCUSSION

Regarding the analysis of the applied instruments, it is noteworthy that the acquisition of the Spanish language through the use of sign language is essential as it enables students to develop their communication skills. Also, teachers must employ visual resources, which are critical within the teaching-learning process, to foster an inclusive classroom environment by utilizing pedagogical strategies at both the middle and upper elementary levels. Besides, parents consider it important for teachers to implement learning strategies that enable hearing-impaired students to communicate effectively and achieve improved acquisition of the Spanish language through the use of didactic strategies involving sign language. Furthermore, English teachers emphasized that empathy, innovation, and learning strategies are necessary to facilitate Spanish language acquisition in an inclusive and empathetic environment. These elements motivate students and encourage their participation in activities both within and beyond the classroom setting.

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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