Construction of Signed Speeches by Deaf University Students*

[English version]

Construcción de discursos signados de estudiantes Sordos universitarios

Construção de discursos sinalizados de estudantes Surdos universitários

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Abstract

Objective: This article aims to analyze the construction of signed speeches by Deaf university students (users of sign language) based on teaching systematization in the deepening cycle of *Strengthening Colombian Sign Language* (CSL) as a subject, between 2010 and 2020. The goal of this subject is to provide students with the tools to develop and enhance metalinguistic and metacognitive skills for creating academic discourses in CSL. **Methodology**: A qualitative approach was adopted. Analytical programs of the

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subject, in-depth interviews with the teacher in charge and papers by the students were analyzed. This analysis identified patterns and issues in CSL teaching. **Results**: The concept of *visual text* is introduced in Sign Language (SL) as an alternative to written text, essential in the context of the subject. In addition, theoretical foundations from metalinguistics and metacognition are established, and five didactic strategies to foster these skills in students are detailed. **Conclusions**:The importance of continuously strengthening metalinguistic processes in deaf students in order to improve their academic performance in higher education is emphasized, highlighting the need to generate specific teaching alternatives.

Keywords: deaf education; sign language; higher education; cognition (obtained from the UNESCO thesaurus).

Resumen

Objetivo: en este artículo se analiza la construcción de discursos signados en estudiantes universitarios Sordos usuarios de la lengua de señas partir de la sistematización de la enseñanza en el ciclo de profundización de la asignatura *Fortalecimiento de Lengua de Señas Colombiana*, entre 2010 y 2020. La asignatura tiene como objetivo brindar al estudiante herramientas para que desarrolle y potencie habilidades metalingüísticas y metacognitivas para la elaboración de discursos académicos en LSC. **Metodología**: se adoptó un enfoque cualitativo, analizando los programas analíticos de la asignatura, realizando entrevistas a profundidad con la docente titular y revisando los trabajos entregados por los estudiantes. Este análisis permitió identificar patrones y temas emergentes en la enseñanza de la LSC. **Resultados**: se introduce la noción de *Texto visual* como una alternativa en LS al texto escrito, fundamental en el contexto de la asignatura. Además, se establecen fundamentos teóricos desde la metalingüística y la metacognición, y se detallan cinco estrategias didácticas aplicadas para fomentar estas habilidades en los estudiantes. **Conclusiones**: se resalta la importancia de fortalecer continuamente los procesos metalingüísticos en los estudiantes sordos para mejorar su desempeño académico en la educación superior, subrayando la necesidad de generar alternativas de enseñanza específicas.

Palabras clave: educación de sordos; Lenguaje de signos; enseñanza superior; cognición (obtenidos del tesauro UNESCO).

Resumo

Objetivo: este artigo analisa a construção de discursos sinalizados em estudantes universitários Surdos usuários da língua de sinais, a partir da sistematização do ensino no ciclo de aprofundamento da disciplina Fortalecimento da Língua de Sinais Colombiana, entre 2010 e 2020. A disciplina tem como objetivo fornecer ao estudante ferramentas para que ele desenvolva e potencialize habilidades metalinguísticas e metacognitivas para a elaboração de discursos acadêmicos em LSC. **Metodologia**: adotou-se uma abordagem qualitativa, analisando os programas analíticos da disciplina, realizando entrevistas em profundidade com a professora titular e revisando os trabalhos entregues pelos estudantes. Esta análise permitiu identificar padrões e temas emergentes no ensino da LSC. **Resultados**: introduz-se a noção de Texto visual como uma alternativa em LS ao texto escrito, fundamental no contexto da disciplina. Além disso, estabelecem-se fundamentos teóricos da metalinguística e da metacognição, e detalham-se cinco estratégias didáticas aplicadas para fomentar essas habilidades nos estudantes. **Conclusões**: destaca-se a importância de fortalecer continuamente os processos metalinguísticos nos estudantes surdos para melhorar seu desempenho acadêmico no ensino superior, sublinhando a necessidade de gerar alternativas de ensino específicas.

Palavras-chave: educação de surdos; Linguagem de sinais; ensino superior; cognição (obtidas do tesauro UNESCO).

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Introduction

Deaf people[1] are considered a linguistic and cultural minority due to the use of Sign Language (SL) which plays a main role in building their unique identity and experiences (Humphries et al., 2022; Tarazona, 2003). This recognition is based on different linguistic and cultural features, especially related to Sign Language use.

The main characteristic of Deaf people as a linguistic minority is the use of sign languages; such as Colombian Sign Language (CSL), American Sign Language (ASL), Brazilian Sign Language (LIBRAS) and others, as natural languages with their own grammatical and syntax rules (Lillo-Martin & Hochgesang, 2022). These languages passed from generation to generation within the Deaf community and became the main means of communication for Deaf people (Ladd, 2011). The sign languages as distinct linguistic systems establish the Deaf as a recognized linguistic minority.

Deaf culture is intrinsically linked to SL use and plays a significant role in Deaf identity. This culture embraces beliefs, values, customs, and social norms that are different from listening culture, it reinforces the sense of community for Deaf people. Cultural practices, such as storytelling, art and events of Deaf pride contribute to the cultural cohesion and resilience of this community (Ladd, 2011).

The recognition of the Deaf as a linguistic minority is crucial to protecting their linguistic rights and access to education. Relying on policies and practices in educational contexts to foster positive attitudes toward SL, and generating empowerment scenarios is also essential, especially when working on training Deaf teachers who are expected to be life models for new generations and to feel proud of SL and of being Deaf (Shantie & Hoffmeister, 2000).

The recognition of SL as the natural language of the Deaf community and the need to foster and strengthen its use in educational environments (such as universities) is the core of the proposal for inclusion of the *Universidad Pedagógica Nacional (UPN)*. It leads the *"Hands and Thought"* project for designing and implementing reasonable supports and adjustments for the inclusion of Deaf students in the University. To achieve this goal, several activities are taken and two of them are discussed in this paper: the approval and creation of visual

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1 The word "Deaf" will be distinguished in the text as capitalized according to the convention of emphasizing cultural factors of deafness further than audiological features (Sánchez, 1990; Ladd, 2011)

texts as academic publications, and the subject of *Strengthening Colombian Sign Language* (Rod et al., 2009).

However, SL use depends on the user's communication skills, so that the user can communicate thoughts effectively and contribute to academic dialogue (Alawajee, 2022). Thus, designing alternatives to strengthen the SL user becomes necessary. In 2023, as part of the inclusion strategies of Deaf students, UPN created the subject *Strengthening Colombian Sign Language*. It has ten levels and is divided into three cycles (Rod et al., 2009).

Reviewing and updating the training proposal in light of the changes in the realities of Deaf people, training models, academic approaches, and societal shifts over the past 20 years. This paper presents a systematization of the subject in the advanced cycle, between 2010 and 2020. The research combines educational experience based on key documents and recent academic work to understand and improve SL teaching. The qualitative approach allowed for exploring in-depth how theoretical foundations and pedagogical strategies have evolved.

The curriculum was reviewed as a source of information. In-depth interviews with professors were conducted and some of the final papers delivered by students were also reviewed. This analysis revealed patterns and common topics that enrich the understanding of how SL has been taught in the advanced cycle.

The data codification and topic analysis enabled the data organization and facilitated a critical reflection on educational practice. It also allowed a structured organization of theoretical bases to support the subject. This reflection included the course experience with the most recent empirical findings and theoretical discussions on the acquisition and strengthening of SL as the natural language of deaf people and on the development of metalinguistic and metacognitive skills as the main elements of the academic proposal.

Metalinguistics and Metacognition as the Main Axes of the Proposal

Metalinguistic awareness and metacognition are two interconnected cognitive processes that play an important role in learning and developing a language (Pinto et al., 2012). "Metalinguistic consciousness" refers to the ability to think and reflect on language as an object of study, while "metacognitive" refers to higher-order cognitive processes involved in the control and regulation of one's own thinking and learning. These processes interact and influence

each other in several ways; they contribute to communicative competence and comprehensive cognitive development.

Metalinguistic consciousness and metacognition have a bidirectional relationship in which they encourage each other. The first supports the second by providing students with knowledge and tools to reflect and regulate their language learning processes (Howerton-Fox & Falk, 2019). Students can consciously choose the right learning strategies, control their understanding and production, and make the necessary adjustments by understanding the structures and rules of a language. Metacognition promotes metalinguistic awareness by encouraging students to self-reflection, ask questions, and to actively look for opportunities to explore and analyze the forms and functions of language.

Metalinguistic skills play a crucial role in language learning and, in this case, for deaf-signer students, as they enable students to formulate a deeper understanding and analysis of the structures, patterns, and rules of their own language (Borgna et al., 2011). This understanding allows students to make sense of linguistic forms used in their natural language; SL, as a target language, ensures accurate and appropriate use of this language. However, exploring the benefits of the development of metalinguistic and metacognitive skills in the context of strengthening SL as a first language is convenient. The care of these skills provides many crucial advantages.

First, metalinguistic skills support language analysis. Deaf-signer students with strong metalinguistic skills can deconstruct and analyze components of SL, in relation, for example, to the training parameters of signs (handshape palm orientation, hand's location in relation to the body, hands and face movement), facial expressions with meaning, as well as grammatical rules. This analysis helps them to understand and produce signs accurately, enabling effective communication within the Deaf community and with hearing people.

Metalinguistic skills are important in language learning for several reasons supported by findings from several research projects. Metalinguistic awareness has been demonstrated to significantly predict reading comprehension skills in Deaf-signer students. The ability to analyze and understand structures, patterns and rules of language was also identified as a key factor in the mastery of the language (Berke, 2013; Varela et al., 2017). For example, a Deaf-signer student with metalingistic skills can recognize and understand specific linguistic features in SL, such as classificatory constructions or non-manual markers for grammatical purposes. This awareness improves understanding, production and mastery of SL.

Second, these skills foster the resolution of language problems. Deaf-signer students with developed metalinguistic skills can use their knowledge and ability

to analyze to overcome language challenges. They can decode unknown signs, infer the meaning of complex grammatical structures, and adapt their sign style according to the communicative context and the audience's needs (Davidson *et al.*, 2014).

Strong and Prinz (1997) studied the role of metalinguistic skills in the resolution of linguistic problems in Deaf-signer students. They identified that those with higher metalinguistic skills were more effective at decoding unknown signs and adjusting their sign style to contextual signs for better communication results. An example is a Deaf student who faces a new sign during a conversation, uses metalinguistic skills to disaggregate the sign components, compare it with familiar signs, and infers its meaning based on contextual keys and linguistic knowledge. This problem-solving approach enables effective communication and helps when a student is deep in disciplinary aspects in which new vocabulary is introduced daily in the classroom.

Finally, metalinguistic skills benefit language acquisition. Deaf-signer students can take advantage of their understanding of structures and patterns in their SL to support themselves in learning a new language, such as written Spanish or another SL. They can identify similarities and differences to strengthen knowledge and skills (Hermans et al., 2008; Mayberry et al., 2011) based on conscious analysis and comparison of linguistic elements between their native language (SL) and the target language.

An example is when students have the opportunity to be at lectures or assist at a lecture using international SL. It joins the roots of many languages and demands a great ability of the signer to infer contextual keys and transposition of elements from their language to another (Rosenstock, 2008).

Wang and Chen (2018) highlighted the impact of metalinguistic skills on language acquisition in Deaf-signer students. Those students who could consciously analyze and compare linguistic elements in their native SL and target language demonstrated greater competence and ease in learning the target language. For example, a Deaf-signer who interacts with another signer from a different SL and can use metalinguistic skills to analyze the communication structure, identify key words, and quickly make language arrangements to achieve effective communication. This metalinguistic awareness combined with the structural similarities of two languages (e.g. languages of French origin) promote a more efficient learning process and improve the ability to adapt and use language in different contexts.

Research emphasizes the importance of metalinguistic skills for Deaf-signer students in language learning, although there is interest mainly in favoring skills development in the use of a majority language. However, through the promotion of early acquisition of SL, language analysis and problem-solving, metalinguistic

skills foster a deeper understanding and effective use of language forms. Through the strengthening of metalinguistic skills from different educational scenarios, Deaf students can improve language development and communicative competence as Deaf-signers. It improves the general communication and learning skills of other languages.

However, a key question arises as to whether metalinguistic skills are the same for written languages as for SL, so that strategies can be interchanged to improve the creation of written and visual texts. It is a complex issue and demands careful consideration of the unique characteristics and modalities of each language. While there are similarities in metalinguistic abilities between languages, there are also important differences in the specific properties of each language and its expression.

In written language, metalinguistic skills often involve the ability to use written symbols, analyze the utterance structure, and understand grammar rules and conventions (McCutchen, 2011). For example, a competent writer can identify and correct grammatical errors or restructure sentences to improve clarity.

In SL, metalinguistic skills include the ability to analyze and reflect on shapes and sign structures, including handshape, movement, location and non-manual characteristics; such as facial expressions and body movements. SL users can participate in metalinguistic tasks, such as identification and explanation of some specific signs, sign components analysis, or signs comparison in different dialects or regional variations (Jarque, 2011; Safar et al., 2018).

While there are shared aspects of metalinguistic skills between written language and SL, there are also clear differences from expression modes of each mentioned language. For example, in SL, non-manual signals such as facial expressions and body movements, play a crucial role in transmitting grammatical information and changing signs' meaning (Barreto & Cortés, 2014). These non-manual characteristics require metalinguistic awareness and interpretation that may not be the same as in written language.

Furthermore, SL's visually-spatial nature presents unique metalinguistic challenges. SL users should consider the spatial layout of signs, visual iconicity and the coordination of multiple linguistic elements simultaneously. These aspects of SL's metalinguistic skills are not directly applicable to written language (Berke, 2013; Emmorey, 2021).

Therefore, while there are overlapping cognitive processes involved in metalinguistic skills across different languages, it is important to recognizing

the disntinct characteristics of each modality. Metalinguistic skills for written language and SL are influenced by different characteristics and properties of these languages. This is why educators and researchers should consider the specific metalinguistic demands of SL and develop appropriate educational strategies to support the metalinguistic development of deaf people (Howerton-Fox & Falk, 2019; Tomaszewski et al., 2019).

Strengthening of Metalinguistic and Metacognitive Skills

The inclusion of metacognitive and metalinguistic skills in programs for the education of Deaf people is an important component of language. While there is a rising recognition of the importance of metacognitive and metalinguistic skills in language learning, in the context of Deaf-signer people, the integration of specific curricula or programs aimed at developing these skills for SL use and knowledge is still limited.

One aspect to highlight is the small number of research involving metalinguistic skills in SL and their impact on discursive ability in this same language. On the contrary, there is extensive literature and research on how to improve metalinguistic skills and their influence on the reading and writing processes of majority languages. (Albalhareth & Alasmari, 2023; Ausbrooks & Gentry, 2014; Benedict et al., 2015; Berke, 2013; Borgna et al., 2011; Hermans et al., 2008, Howerton-Fox & Falk, 2019). This fact shows how even in educational contexts, programs and strategies to strengthen SL function as a bridge language, rather than a target language. This is how the creation of the subject of *Strengthening Colombian Sign Language* at the university was mainly based on metalinguistic and metacognition to strengthen the first language in listeners and, those developed with the Deaf population, designed to favor second language.

From metacognition, as the basis of the curriculum, several classifications of metacognitive strategies for writing and oral communication are reviewed. Thus, the use of visual texts in CSL is one of the main strategies (López, 2015; Herrera, 1997; Rojas et al., 2019).

The developing and strengthening of metacognitive skills can significantly benefit Deaf students in their SL discourses by improving self-awareness, strategic thinking, and self-regulation of the communication process. Metacognition allows people to monitor and control their own thinking to achieve a more effective and efficient language production. In the case of Deaf students who use SL as

their main way of communication, the development of metacognitive skills can contribute to their linguistic fluency, clarity and general expressive skills.

Self-awareness is a key aspect of metacognitive skills that supports the improvement of SL speech, and it is an aspect mediated by metalinguistic skills. To be aware of their own language skills, Deaf students can identify aspects to improve and focus on specific language characteristics to strengthen. For example, they can reflect on the speed at which they sign, use their own facial expressions that are consistent with the meaning of the message, and the structure of the sign space that should be organized at the time of sending a message in SL, among other aspects, to evaluate its effectiveness communicating an idea. With better metalinguistic skills, Deaf students can make conscious adjustments and refine their speeches to ensure better communication results.

Moreover, metacognition involves strategic thinking (Castro, 2017), which plays a vital role in SL discourses. Deaf students can use metacognitive strategies such as planning and organizing the topic and its sequence, selecting the signs they want to use, the way they will use the sign space, appropriate facial expressions, and other elements that will enable them to structure their speech effectively. For example, they can use classifiers strategically (handshapes that represent objects or actions) to provide visual details and create vivid mental images for the audience. With strategic thinking, Deaf students can optimize the impact and understanding of SL discourses.

Monitoring as an essential component of metacognition is important to bear in mind, as it allows Deaf students to report and control their communicative performance (Borgna et al., 2011). Deaf students can also evaluate their own understanding and adjust the way they express accordingly, ensuring that they are effectively communicating the intended message. For example, if a Deaf student identifies confusion or misunderstandings from the audience, he or she can moderate sign speed, clarify signs, or provide additional contextual information to improve understanding and ensure the communicative purpose of the message. By actively self-regulating, Deaf students can adapt their discursive strategies in real time to achieve more effective communication.

Skill and strategy practices in SL discourses with an audience allows students to predict and estimate their future discursive actions in a visual text. When creating a visual text, the audience and its response are envisioned, and prior responses nourish this image, therefore exposure to audiences is essential.

Research provides evidence of the positive impact of metacognitive skills on language production. For example, Schunk and Zimmerman (2001) highlight the importance of self-regulation and strategic planning to improve oral

communication skills. Although this research focuses on oral language, the underlying principles of metacognition can also be applied to SL speeches.

The integration of metacognitive strategies into an SL curriculum helps Deaf students develop a deep understanding of language structures, speech structure, and communication strategies. For example, teaching Deaf students metacognitive strategies such as self-control and self-correction during SL production can improve their accuracy and linguistic competence (Buitrago et al., 2021).

Thus, the aim of pedagogical work is to improve self-awareness, strategic thinking and self-regulation. Deaf students can improve their linguistic fluency, clarity and overall expressive skills in SL. Through reflection, planning and conscious adjustment, they can optimize the content, structure and expression in SL to effectively communicate.

Visual Texts in SL

SL lacks a standardized writing system. Despite many initiatives, preserving and transmitting information represents a significant challenge. According to this situation, looking for alternatives to ensure accessibility and the possibility for it to serve for future references is imperative. The solution lies in the use of a visual video recording called as "visual text". The recording and presentation of content in video allows the capture and transmission of SL's own gestural expressions, movements and spatial locations, which facilitates a more complete and faithful understanding of an original message (Burch, 2004).

Visual texts benefit the Deaf community, including teachers, who become valuable resources for overcoming linguistic and cultural barriers, and enable a greater reach and dissemination of the expressive wealth of SL (Rosenthal, 2009; Wurm, 2018).

Visual text offers the advantage of serving as a reference to different times and contexts. They are especially valuable in academic and research contexts. The access to SL texts in this manner ensures greater preservation of information, and wider and more effective dissemination of knowledge. Maintaining an academic record in SL broadens the knowledge base accessible to Deaf individuals across different educational levels in their native language. It favors the understanding and the strengthening of training and research processes by the Deaf community from the legitimization of SL.[2]

2 In this link a degree project of a Deaf-signer student performed in the visual text mode can be checked

However, the implementation of this modality also presents technical and logistical challenges. Proper infrastructure and technology are required to record, store, and disseminate videos. In addition, collaborative and meticulous work is required to ensure quality in the production of visual texts in SL, linguistic and cultural particularities of this language have to be respected.

The challenge of editing SL texts must also be taken into account. In the case of written texts, the editing process allows making changes to letters or a word as a minimum work unit. However, editing recorded discourses in SL is more complicated in the case of errors, since the minimum unit for correction is not a sign but a pre-defined section between corporal pauses.

Visual text is an innovative and effective solution for preserving and sharing the content of this manual-view-gestural and visual-spatial language. It provides a valuable tool for promoting inclusion, disseminating knowledge and strengthening communication between Deaf and hearing people. Its use in educational contexts and its evaluation as written texts for the Deaf community represents an important step towards the evaluation and recognition of linguistic and cultural diversity in our society (Burch, 2004).

Proposal for the Strengthening of Sign Language in Higher Education

This section presents teaching strategies for the course on *Strengthening Colombian Sign Language*, which is an exclusive course designed for Deaf-signer students at the university. This subject was created in 2003 as part of the proposal for the inclusion of Deaf students of *Universidad Pedagógica Nacional* (UPN), led by the «Proyecto Manos y Pensamiento» (Abello et al., 2022; Rodríguez et al. 2009, 2021). Currently, this is a four-level subject exclusive and mandatory for Deaf students.[3]

The strategies are intended to enhance metalinguistic and metacognitive skills in Deaf students to foster understanding, elaboration, and the presentation of academic documents in SL. These strategies include explicit instruction, language analysis activities, vocabulary development and reflective language tasks. Each one is developed as follows.

The first strategy deals with explicit instruction. Teachers clearly explain and exemplify metalinguistic concepts, such as phonetic rules, grammatical

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http://repository.pedagogica.edu.co/handle/20.500.12209/16537

3 This subject is approved as a mandatory subject for strengthening Spanish (e.g.: text production, oral communication), by recognizing CSL as a first language of Deaf people in Colombia.

structures, and vocabulary strategies. Practical tasks are provided to develop students' awareness and understanding. For example, teachers explicitly and in-depth teach handshape parameters in SL, phonology, or grammatical characteristics, such as verbal concordance (Bermúdez, 2003; Martínez et al., 2018; Oviedo, 2001).

One of the activities is teaching grammatical structures with a pedagogical diary or fieldwork in CSL. This is a regular task for UPN students, as they are graduating in pedagogical programs. It explains how to report the day, date, and place of the action, and then make a detailed description of events without making interpreting facts. Clear examples of pedagogical diary structure are presented using material from previous classes. Then, practice tasks are offered for students to apply this structure in their video-recorded CSL pedagogical or fieldwork diaries. Then they are reviewed and commented on by the whole classroom.

The second strategy is based on language analysis, students are encouraged to analyze its forms and structures. These activities may include sentence analysis exercises, sign categorization tasks, or discussions on language use in different contexts. By participating in these activities, students develop critical thinking and metalinguistic reflection skills, enabling a deep understanding of SL structure (Benedict et al., 2015; Singleton & Newport, 2004).

An example of the activities developed within the strategy is presenting students with a visual text in CSL, from which they are asked to identify different types of verbs, such as simple, directional, and representative. Students also analyze sentence structure, handshapes, and movement to categorize verbs and discuss how they convey different meanings and actions. These exercises are usually performed using CSL pedagogical material and reviewing productions of different types of signers.

The third strategy focuses on vocabulary development. Teachers provide explicit instruction on strategies, such as the use of context keys, identification of roots and affixes of words, and practice of sign association. Significant vocabulary activities are created, such as sign-word games, sign diaries and debates with multiple words, to improve students's lexical knowledge and widen their repertoire. These strategies support the development of metalinguistic skills related to word recognition and word relationships (Alawajee, 2022; Jarque, 2011; Singleton & Newport, 2004).

A sign root analysis is carried out to identify word roots and affixes in CSL signs, part of vocabulary development (Barreto & Cortés, 2014; Martínez et al., 2018). Students learn to divide signs into meaningful components and explore connections between signs with roots or shared affixes. They participate in

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activities to identify these elements and discuss how they contribute to these signs meaning.

The fourth strategy has to do with the process of creating new signs to name specific academic concepts. Sometimes, when a student is in a classroom with no experience with Deaf students, the sign language interpreter is confronted with new concepts that do not have a sign. In these cases, dactylology, i.e. spelling in SL, should be used to show how the word is written. However, the common use of this word in a teacher's speech forces the creation of a new sign. These cases are discussed in class to find out if the sign already exists but is unknown or if proceeding to the creation of a new one that reflects its concept is appropriate.

To illustrate the above, some of these linguistically challenging concepts for students and teachers have been "epistemologically" and "hermeneutically" approached. Deaf teachers and listeners, Deaf students and interpreters, through collaborative work, discuss and analyze linguistic aspects. Visual creativity leads to the creation of a new sign that visually represents the intricate concept (Barreto, 2023; Barreto-Muñoz, 2015). This process emphasizes the synergy between linguistic innovation and academic knowledge; it reflects the dynamic nature of SL as it adapts to meet the specific linguistic demands of several academic domains.

Through this joint analysis strategy, Deaf students develop skills that enable them to critically evaluate the effectiveness of a sign to convey complex concepts and foster metalinguistic awareness.

In the fifth and last strategy, reflective language tasks are integrated into SL learning activities. Students are encouraged to analyze and compare different speech samples, discuss language use options in specific situations, or reflect on their own use and progress. These tasks promote metalinguistic awareness and self-reflection in which students monitor and evaluate their metalinguistic skills (Borgna et al., 2011; Marschark & Knoors, 2012).

An example of these tasks is assigning students the creation of a visual text in CSL in which they describe a personal experience or explain a topic they consider mastering. They are then asked to reflect on their language choices, such as the use of a sign, sign classifiers, or non-manual markers, and discuss how these choices help in the clarification and general expression of the narrative.

Table 1. *Summary of Strategies.*

Strategy	Description
Explicit Instruction	Explain metalinguistic and grammatical concepts with clear and practical examples.
Language Analysis	Promote structure analysis and use of CSL to develop critical skills.
Vocabulary Development	Build practical use exercises that promote the widening of students' vocabulary.
Creation of New Signs	Dialogue to create new signs for new academic concepts within the corpus.
Reflective Language Tasks	Integrate reflective activities for students to cooperatively evaluate their use of CSL.

Table 1 summarizes five didactic strategies. They are intended to encourage the development of metalinguistic and metacognitive skills in Deaf students. Through explicit instruction, language analysis, vocabulary development, creation and reflection around new signs, and reflective language tasks, students improve their understanding and CSL use. These strategies support their language mastery, critical thinking skills and metalinguistic awareness to succeed academically and participate effectively in their respective fields of study.

Findings in Pedagogical Process and Individual Learning Moderating Variables

In general, the experience over the years on the subject of the *Strengthening of Colombian Sign Language* reflects positive results. Through the different levels, students' progress in recognition and mastery of their language overcomes its

basic use to a metalinguistic consciousness that strengthens the appropriation and value of SL and its communicative capacity. The results from the program implementation support previous research and demonstrate potential for developing advanced metalinguistic skills in SL Deaf-users with a direct impact on their identity as Deaf people.

The correspondence of these results with previous research on metalinguistic processes in users of American Sign Language (ASL) reinforces this perspective. The findings conducted on Deaf children with ASL show high levels of metalinguistic awareness, in phonological consciousness and grammatical structure (Schick et al., 2007). In addition, profound knowledge of syntax, morphology and phonology in ASL among native signers supports deep analysis and extensive discussion of several aspects of SL (Humphries et al., 2022).

However, it is important to note that Deaf students do not constitute a homogeneous category due to the uniqueness of each individual in a human diversity context. Multiple factors, such as culture, family, education, age, and type of hearing loss, influence levels of metalinguistic skills in users. Cultural immersion in a rich linguistic environment, early exposure to SL, and family context fosters and enriches active communication to promote higher levels of metalinguistic consciousness in Deaf users. The age at which SL is acquired and the education level also play a significant role in the development of metalinguistic skills. These aspects are hereby presented in more depth.

Cultural factors play a main role in metalinguistic skills formation in Deaf individuals. Those within a solid Deaf culture who have early and extensive exposure to SL tend to have higher levels of metalinguistic awareness. Immersion in culture and an enriching linguistic environment benefits metalinguistic analysis and exploration of several language features (Humphries et al., 2022; Mayberry & Lock, 2003).

The acquisition age of SL also has a significant impact on individuals' cognitive processes, especially in Deaf individuals who experience linguistic deprivation with short, medium, and long-term repercussions. Cognitive deprivation arises when the individual is not exposed to a natural language during the critical period of language acquisition (Hall et al., 2019; Humphries et al., 2022). Students who had acquired SL at an early age tend to show more advanced metalinguistic skills due to greater exposure and longer periods of language acquisition (Hall, 2017).

Family factors also influence metalinguistic skills. Deaf users born in families that use SL as the main way of communication and are actively involved in linguistic interactions tend to have better metalinguistic skills. However, it is uncommon for a Deaf child to be raised in a family environment where SL is used as the primary mode of communication. At the UPN, for example, only 2% of students have Deaf-signer parents. This reality is widely consistent; approximately 10% of Deaf children have hearing parents (Karchmer & Mitchell, 2004). In Colombia the figures are similar: an estimated 5% of children are born from hearing loss parents, and around 2% grow up in households where SL is the main language (INSOR, 2020).

The Deaf children of hearing parents show significant differences in text comprehension compared to children whose parents are hearing, especially in families with several generations of Deaf individuals. This is because familial environments where SL is used provide opportunities for metalinguistic discussions (Schick et al., 2007). This type of environment also improves a Deaf individual's ability to grasp visual messages, which is consistent with Hermans et al. (2008).

Education also has a significant impact on the metalinguistic skills of Deaf students. Formal education with explicit instruction on metalinguistic concepts, grammar, and language analysis can improve metalinguistic awareness (Shantie & Hoffmeister, 2000). Those students who had access to bilingual education showed higher metalinguistic skills and, in the students' stories, the figure of deaf teachers stands out as an essential aspect of identity, use, and preference for the language.

The bicultural bilingual approach recognizes SL as the first language and Spanish as the second; it also promotes interculturality where distinct cultures converge and are shared. This aims at recognizing and addressing the diversity of Deaf people. This diversity promotes their integral development and participation in educational communities. Strategies such as classes for Deaf children in primary school, inclusion by interpreters in secondary school and an *Individual Plan of Reasonable Adjustments* are implemented to enrich exchange and inclusion in the educational field.

However, considering all students who have been part of UPN as bilingual is not possible without first recognizing the educational history of the Deaf community in Colombia. The implementation of a bilingual bi-cultural approach began in the early 90s in some private schools and has been regulated in Colombian public education since 2017; in general, its implementation can be considered as recent. This shows that the first generations of Deaf students in UPN started their educational process through an oral approach, including total communication in primary school and, then, the inclusion of interpreters

in high school in regular classes. In many cases, access to SL occurred late (Rod et al., 2009).

Final Reflections

The progress observed in students throughout the course is aligned with the research presented by Mayberry and Lock (2003) on metalinguistic and metacognitive skills in SL Deaf users. It can be partially attributed to the educational opportunities through formal instruction in SL, which provided greater exposure to metalinguistic concepts and explicit instruction.

This aspect becomes meaningful as UPN trains Deaf teachers, most of whom are expected to train and guide future generations of Deaf children in the acquisition of their first language. Formal education that explicitly addresses metalinguistic concepts, grammar, and language analysis, and a bilingual bi-cultural approach that articulates Spanish and SL, help to raise metalinguistic consciousness in Deaf students. Deaf teachers in the educational process also play a crucial role in the formation of metalinguistic skills. Nevertheless, despite these advances, continuing research and developing effective, comprehensive educational approaches that further foster metalinguistic skills in education for Deaf people is essential.

Moving forward with proposals that recognize SL as a target language is imperative and essential for the development of metalinguistic skills in that language. This goes beyond merely improving reading and writing processes in a second language. The training of future Deaf teachers must be based on the understanding that being competent in a language implies its use, as well as the recognition of its main elements and mastery of its components. This aims at enriching the cognitive and communicative skills of students who will be future professionals in the area. This perspective leads to a constant evolution in education for Deaf people within metalinguistic development as a vital cornerstone.

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