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**5º** CONGRESO CARIBEÑO DE  
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# Beneficios de la neurodidáctica interdisciplinaria para la enseñanza del alemán como lengua extranjera (LE) en Colombia

## Benefits of Interdisciplinary Neurodidactics for Teaching German as a Foreign Language (LE) in Colombia

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### Resumen

Esta investigación pertenece al área de didáctica de lenguas extranjeras, específicamente del alemán en la educación superior. Esta fase exploratoria tiene como objetivo general analizar la importancia del alemán como lengua extranjera (LE), para contribuir con los principales hallazgos a la mejora de la educación y la práctica de una lengua que podría adquirir mayor importancia en el mundo actual y proporcionar una mejor comprensión del proceso de aprendizaje en el cerebro. La metodología aplicada es cualitativa, basada en la revisión de la literatura enfocada en la revisión sistemática, que se define por utilizar métodos como bases de datos y búsquedas manuales con el fin de encontrar, seleccionar y sintetizar críticamente toda la evidencia disponible y relevante para responder a la pregunta de investigación. Los hallazgos de esta investigación recopilaron conclusiones obtenidas de 46 referencias basadas en expertos y autores para establecer cuatro categorías.

**Palabras clave:** alemán como lengua extranjera, estrategias de enseñanza, interdisciplinariedad, lenguas extranjeras, neurodidáctica.

### Abstract

This research belongs to the area of foreign languages didactics, specifically German in higher education. This exploratory phase has as a general objective to analyze the information regarding the significance of German as a foreign language (FL), to contribute with the main findings to the enhancement of the education and practice of a language that might acquire more importance in today's world and provide a better comprehension of the learning process in the brain. The methodology applied is qualitative based on the literature review focused on systematic review which is defined to use common methods such as database and manual searches to find, select, and synthesize critically all available and relevant evidence in terms of responding to the research question. The findings of this research established a transparent report of conclusions obtained from forty-six references based on experts and authors to set four categories.

**Keywords:** Foreign languages, German as a foreign language, interdisciplinarity, neurodidactics, teaching strategies.

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## 1. Introduction

To begin, the problem statement is analyzed for this education research, which is based on the foreign language teaching strategies that tend to be repetitive and traditional (Horwitz, 2020). This could have a negative impact on students by not keeping them motivated for a long time in learning and practicing the foreign language, which could turn into wasted time spent, and it could influence the professional life of teachers by not having job or financial stability due to student dropouts who may face difficulties (Singh, 2022).

In terms of linguistics and the acquisition of a foreign language, it comprises four communicative skills, of which oral production is considered the most complex, since it is the one that is applied daily and immediately (Anáhuac, 2020). For this reason, a wide range of methodologies, resources, and environments that cover neurodidactics in conjunction with interdisciplinarity for German are not reflected, where greater emphasis is placed on learning in a real context with situations that reflect greater practice of oral production (Barajas et al., 2015), instead of a focus on grammar, reading comprehension, or written production, without neglecting its relevance and execution.

Furthermore, beginning the process of speaking a foreign language that is completely unknown generates stress, anxiety, and insecurity (Liu & Huang, 2011), which is why teaching strategies are needed to improve sensations, emotional, and cerebral responses at the moment in which students are faced with mastering the language, since many times it is not enough with activities that require literal memorization processes, but rather, Lara Freire et al. (2022) purpose exercises and activities that allow students to speak the foreign language spontaneously and naturally without being subject to emotions that can lead to demotivation or frustration are increased.

On the other hand, German is a foreign language that is not commonly chosen as the first election when learning foreign languages in Colombia and in several Spanish-speaking countries (DAAD, 2020); because of that, it is perceived by many as a phonetically strong and difficult language to learn (Universidad Externado de Colombia, n.d.) due to its grammatical structures and the extent of its vocabulary. This has repercussions on the absence of wisdom of the language and its culture since the population has prejudices about the language and its linguistic variants. This is why, in most cases, the first option chosen is English, due to its economic, social, and cultural need nowadays. However, it is necessary to encourage the learning of a different language that provides the same level of importance for various aspects of society, to raise interculturality, and to optimize the quality of education (Shchur et al., 2022).

In addition, the professional and intercultural requirements of today's world, which according to Rigolot (2020) transdisciplinarity demonstrates the need to complement knowledge through two or more disciplines, which could enrich different fields of expertise and promote brain plasticity, in both, teachers and students, when exposed to practicing a foreign language together with the concepts, topics, and information from different areas.

## 2. Methodology

The methodology approach is qualitative because it expects to understand meanings and explores complex phenomena. It is characterized by using an emphasis on the subjective interpretation of data. The method implemented is the literature review based on a systematic review, which is defined to use common methods such as databases and manual searches to find, select, and synthesize critically all available and relevant evidence in terms of responding to the research question (Creswell, 2021).

Therefore, the search and analysis of experts and authors on the described themes and local, national, and international research backgrounds is presented below. Four categories are established that relate to the problem of this research, which presents findings that are cited.

### **Importance of Neurodidactics**

According to Fernández et al. (2022) and their article, neurodidactics has relevance on the topics of neuroscience, technology, neuroeducation, and pedagogy, so that means that the role of neurodidactics is essential in teacher professionalization and training.

### **Neurodidactics in foreign languages**

The researchers Caballero, Cascales and Gomáriz (2023) found that engaging in activities involving executive functions fosters motivation and enhances the learning process in students, as it correlates with cognitive flexibility, inhibitory control, and working memory.

### **Interdisciplinarity in foreign languages**

Morales and González (2021) conclude from their research carried out on 126 university professors in Mexico, which shows the link between graphic design and other disciplines, thus showing that interdisciplinarity is a necessary tool that encourages the use of intellectual resources that give way to greater practice of analysis, innovation, and criticism.

### **German as a foreign language**

It is found that ICTs are a very effective learning strategy for this language, if it is approached in a pertinent and effective manner, which is based on the knowledge and training that teachers must effectively use these technologies.

## 3. Results

The final thematic analysis of this qualitative research shows the following results per category.

### **Importance of Neurodidactics**

In terms of neurodidactics, it is an effective approach to activate the brain for responding and adapting to new language with the concepts of neuroplasticity, mirror neurons, motor

sensorial learning, and social and cultural skills for prolonging the expertise, all of this, by promoting the activation of positive and prior emotions as the motivation that is the main conductor of the holistic education, that several traditional methodologies do not provide.

### **Neurodidactics in foreign languages**

Activities such as constant repetition of vocabulary, listening to audios based on repetitive topics, and working on grammar guides, among others, are exercises that can be perfected or merged with strategies that promote neurodidactics and its scientific principles. It is prudent that neurodidactics encourage research, delve into different fields of science, and, at the same time, perfect educational methodologies and practices that motivate and actively involve the role of the teacher, the student, the academic community, and interculturality.

Interculturality is seen as a model for several perspectives and ways to see a language not only as a linguistic process, but also as the comprehension of values, customs, traditions and history of a specific folk, that is the empirical environment can cause a huge experience of learning, because it turns into a long-term memory.

### **Interdisciplinarity in foreign languages**

Interdisciplinarity offers and fosters the ability to have critical thinking to be professionals more capable to understand and receive several opinions and perspectives of the disciplines that are not of their complete management, all with the purpose of facing the globalized world and its constant advancements. Also, interdisciplinarity generates cooperation among different areas like research. It means the practice of analysis, innovation and criticism, and the execution of multiple intelligences.

ICC (intercultural communicative competence) model suggests a new manner to think of the knowledge in connection to transnational and decolonial perspectives for the pedagogical meaning, which advises adapting the teaching strategies in consonance with the actuality and the proper values of every culture.

### **German as a foreign language**

The advantages of learning German, as it opens many doors in the professional field, being the native language of one of the European powers, and in the academic field, it offers many educational scholarships. For this reason, in countries like Colombia it is gaining strength, and day by day it is included in more curricula as a second or third language, or as a free course.

It is evident that practicing the language is necessary for its improvement, and students believe that it is necessary to live in a country where the language is spoken; however, there is a lack of practice in a real context, so it would be beneficial to create these situations or encourage them, both inside and outside the classroom, while practicing repetition or doing exercises that require real contexts and speaking naturally.

## 4. Discussion and Conclusions

Regarding the importance of German, this language has a significant impact since it has a share due to its literary, philosophical, and artistic legacy. Further, many scientific foundations remain in this language, and much of the scientific progress is developed in Germany.

In countries such as Colombia, learning German can be perceived as a challenge because of the language grammar and the differences it has with languages as Spanish, reason why the importance of its learning can be increased on behalf of its linguistic, historical and scientific transcendence. And, in this way, even financial and academical facts can be improved because of the international alliances and opportunities.

It is essential to implement a second phase of this research in which the findings of the different neurodidactics strategies can be applied to a German course in higher education with the main objective of integrating the main and most effective approaches.

As an ultimate point, based on the bibliographic review of certain authors, experts and background information, the field of neurodidactics is not yet fully linked to interdisciplinarity for learning German as a foreign language. Although, there are multiple and interesting findings, it is pertinent to emphasize the research of each of these areas and work from them together.

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