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Psycholinguistics, Interactions Between Mind and Language

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Abstract

Currently, psychology as a discipline is dedicated to studying the problems that many children present. They do this with a clear understanding of what Psycholinguistics is dedicated to as an interdisciplinary tool where teachers interact directly to be able to delve into the knowledge of linguistics of their students. The objective of the research is to know the basic elements of this discipline and how students understand, produce, and acquire language, exploring the underlying mental processes that intervene in their learning processes. The bibliography review and the inductive-deductive method were used as methodology. The result was that this discipline is essential in the teaching process in the classrooms since it gives teachers the knowledge to introduce methodologies that help students improve their cognitive needs.

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1 Introduction

Psycholinguistics has its origins in the convergence of psychology and linguistics, disciplines that, since the beginning of the 20th century. Although many psycholinguists tend to consider the beginnings of this science with Noam Chomsky's cognitive revolution between the 50s and 60s, it dates back to the end of the 18th century (Silva Villena, 2014). In this regard, according to Levelt, this is what could be called the pre-Chomskian period (Barón Birchenall et al., 2013) where specialists with different orientations such as doctors, linguists, and psychologists made important discoveries about the brain regions of language, access to mental lexicon in production and comprehension in a language, children's syntactic creations and language dysfunction as a faculty in aphasic patients.

It is a text that contains much more than a 'history of ideas', scientific visions, fallacies, current beliefs, contributions, and also rivalries (Poe et al., 2010; Berridge, 2004). Thus, its thoughtful and careful reading is interesting and educational about the language-cognition relationship. meaning and linguistic structures also influenced the first psycholinguistic approaches, according to Silva Villena (2005), who wrote an introductory review about the concern of prominent thinkers in the history of studies on the relationship between language and thought.

The areas of study are fundamentally in language processing: comprehension and production, in the acquisition of language in children and adults, which lays its foundations fundamentally in the neurology of language (Fernández & Smith, 2011).

2 Materials and Methods

The bibliographic review was used to understand the behavior and approach of the research, in addition to the collection of data that allows analyzing and synthesizing relevant information from academic and scientific sources on a particular topic, which allows for building a well-founded basis for the research. The inductive-deductive method was used to structure and guide the study, providing academic and methodological value.

3 Results and Discussions

Psycholinguistics as a science helps to understand different processes in students from an early age, fundamentally in the acquisition of language (Guaranda Loor & Samada Grasst, 2023), which can explore mental processes, these can be described for example in the understanding of language, has been studied by González & Hornauer (2014), where he examines how the human brain interprets and makes sense of words, phrases, and texts, this includes the recognition of words, the construction of their meaning from the grammar and context in many cases the resolution of linguistic ambiguities.

Another aspect that this science allows is the production of language where the contributions of neuroscience to linguistic development are based, explaining how people transform ideas into understandable linguistic structures, covering the selection of words (lexicon), the construction of phrases, the coordination of motor processes for speech here can be considered as the linguistic theory of Noam Chomsky intervenes (Birchenall & Müller, 2014).

In this context, language acquisition focuses on how individuals, especially children, learn to communicate verbally, where there are studies on language development in childhood such as the one developed by Ortiz et al. (2020), they studied the linguistic characteristics in children between 4 and 6 years old to identify the predictors of optimal language development as an important component of child well-being. This information can be used in new research that can develop the results obtained in their study.

One of the difficulties that can arise in the development of language in many cases is the effects of the environment, this means that linguistics has different manifestations depending on where people develop, these can be sociological, ideological, and institutional factors (Mahecha Bermúdez, 2008). These aspects are influenced in some cases by the differences between the acquisition of the native language and a second language.

Relationship between mind and language

Cognition and language are extremely interconnected, for example, conceptual thinking influences the structure and use of language, and language can shape perception and the way individuals interpret the world, according to the Sapir-Whorf hypothesis, Linguistic relativity is a theory that proposes that language spoken influences the way of thinking about reality (Castillero Mimenza, 2017). In this context, language theory, has much greater importance, having a relevant role when organizing, thinking, or even perceiving the world in which we live.

Mental processes such as memory and attention play a decisive role in the effective use of language, here neurological processes intervene, which includes the study of how areas of the brain (such as Broca's area and Wernicke's area) are involved in linguistic functions and how disorders such as aphasia affect these abilities, according to Herrera (2019), the brain is characterized by its plasticity, predictive capacity and concentration of countless cognitive functions in each region, where neural processes intervene in linguistic processes.

Psycholinguistics is essential to understanding the complex interactions between language and mental processes, providing tools to improve communication and teaching, as well as to treat difficulties related to these. Psycholinguistics is the interdisciplinary study of the mental processes that underlie the acquisition, understanding, production, and storage of language" (Carroll, 2008; Mandera et al., 2017; Van Heuven & Dijkstra, 2010).

Psycholinguistic processes

These are psycholinguistic processes that allow the human being to become aware of himself and his environment, from psycholinguistics and, within the information, it is conceived as an intellectual process through which the oral language that is received as linguistic input, is transformed. in written output, that is, it constitutes a transformation of oral language. Figure 1 shows the cognitive processes involved in this process.

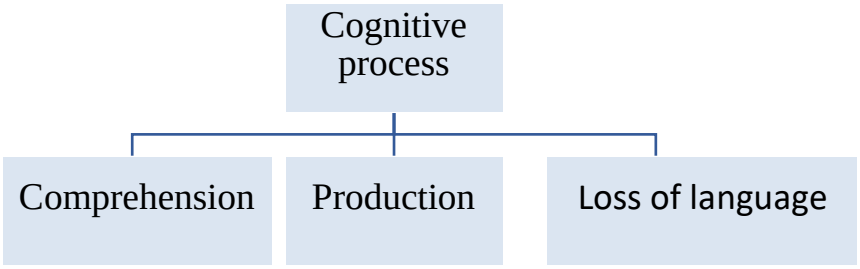

Figure 1. Processes that intervene in the cognitive process of language

Language comprehension is the way in which the brain interprets words and sentences, highlighting models such as that of Garden Path (Frazier, 1982), there are actually elements that intervene in the process of understanding sentences, these authors found longer reading times short for sentences that fit certain syntactic analysis strategies, where there must be an ability or insight to understand and penetrate things in the reading process.

Production is a process where ideas are translated and put on paper, here the writing is already developed, and the ideas are classified to be clear about what is being written. In this sense (Núñez, 2020), proposes a strategy based on didactic and linguistic principles that favors and responds to cognitive processes in writing aimed at satisfying communicative needs and intentions inherent to academic contexts.

Language loss, also known as aphasia, is a disorder that affects communication and is a medical problem that is caused by damage to the areas of the brain that control language. Aphasia can affect the understanding of language, speech, reading, and writing, according to González & García (2019), communication disorders are made up of different alterations of language, speech, and communication that are included within neurodevelopmental disorders to facilitate diagnostic decisions.

Basic elements of psycholinguistics

The basic elements that explain how people understand, produce, and acquire language. These elements are interconnected and reflect essential mental and neurological processes. In the case of students, these elements are

fundamental to understanding how their linguistic capacity develops in learning contexts (Michel et al., 2001; Székely, 2001).

Language Comprehension, involves deciphering words, sentences, and speeches to attribute meaning to them, in this word recognition, is the identification of sounds or spellings while associating them with a meaning. Syntactic processing, in which the grammatical structure of sentences must be understood. Semantic and pragmatic interpretation helps assign meaning and consider context. For example, in students, reading comprehension requires deciphering words and understanding their relationship in the text they read.

Importance of psycholinguistics

One of the elements that it studies and that gives relevance to this science is the functioning of the mind and language, it studies how the brain processes information. Language, from word recognition to the understanding of complete texts, helps identify the cognitive mechanisms involved in human communication, such as memory, attention, and reason (Herrera, 2019).

The application in education makes it essential in the teaching process since it allows creating strategies that contribute to improving the wisdom of second languages, taking into account factors such as age, and cultural context, and also helps to identify and address related learning difficulties. with language, such as dyslexia or language development disorders (Barba Tellez et al., 2019).

It is essential in intervention in language disorders to diagnose and treat linguistic disorders such as aphasia, autism, or stuttering, in addition to providing scientific bases to develop therapies that improve linguistic skills in people with language disorders (Moran Alvarado et al., 2017).

It allows the development of linguistic technologies that contribute to the design of voice recognition, automatic translation, and assistance systems, improves human-machine interaction by analyzing how people understand and produce knowledge (Pizarro & Cordero, 2013).

This science provides tools for the study of bilingualism and multilingualism, helps understand how people acquire and manage multiple languages, and investigates the effects of bilingualism on cognition, such as improvements in working memory and cognitive flexibility (Akçayır & Akçayır, 2017; Kesim & Ozarslan, 2012).

Another element that supports its importance in education is its relationship between language and culture, this examines how language reflects and shapes cultural patterns, and allows us to explore the relationship between language and the perception of the world, supporting theories such as the hypothesis of Sapir-Whorf.

Impact on the development of neuroscience studying how areas of the brain are related to language, such as Broca's and Wernicke's area, work during linguistic production and comprehension, helps understand the neural bases of language, with applications in rehabilitation after injury (Lyytinen et al., 2005; Vandermosten et al., 2012).

These aspects impact the teaching process in education, helping teachers adapt materials and methods to the cognitive needs of students, and facilitating their learning with tools that help improve the problems that teachers encounter in their students.

4 Conclusion

Psycholinguistics is essential in the teaching-learning process for students with reading disorders since it gives teachers the knowledge to introduce methodologies that help students improve their cognitive needs.

Currently, computer tools are used that can be used to improve language problems and reading comprehension in students with cognitive difficulties. These help the interaction between mind and language by providing new knowledge.

Conflict of interest statement
The authors declared that they have no competing interests.

Statement of authorship
The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

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