



Phonetics in Language Development in Elementary School Students



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Abstract

The ability to communicate is one of the greatest attributes that our civilization possesses, thanks to this ability great societies have been built, however, not all people have adequate linguistic abilities, this is largely due to deficiencies in the learning process, one of the influencing factors are the phonetic processes at an early age, in the present study we seek to determine the phonetic incidence in the development of language in students from 6 to 8 years of age, to achieve this objective the macro application of the exploratory method based on a documentary investigation based on previous studies, this allowed the identification of 5 variables; social environment, perception capacity, cognitive processes, conceptual approach and linguistic development, the quantitative method was used through the development of a survey, addressed to the students of the elementary school of the America Educational Unit, the results were analyzed together with the teachers who interpreted the behavior patterns and difficulties, finally the correlation of these results allowed the creation of a bank of factors that were discussed using the expert criteria tool and later weighted in a Kendall matrix, the results determined that the linguistic development in relation to phonetic processes affect 21.86%, being the most determining variable in language development, the group of experts was made up of teachers with more than 15 years of experience, 6 from public institutions, 3 from private schools and the rector of the America school.

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1 Introduction

Throughout history, human beings have demonstrated their capacity for learning and understanding, managing to understand the functioning and the reason for things through science, the verification or correction of theories based on the approach of hypotheses which with Over time they became evident, however, societies would not have been able to reach their full development if there were no fluid communication. According to [Moreno Fernández \(2015\)](#), Over time, the mixture of cultures, races and ethnic groups generated the creation of new dialects and languages, this spread, some disappeared and others are still heard, and the origins of Spanish, English, French, German, Mandarin and the more than 7000 languages around the world start from the pronunciation and the understanding of their verbalization, this is evidenced in the first years of a person's life, they learn to speak long before writing, there are even people who are not readers but speak perfectly ([Kibbe et al., 2011](#); [Brenowitz & Tuttle, 2003](#)).

The learning process in the school stage begins with the phonetic branch of linguistics which studies the production of sounds and their perception, [Schwegler et al. \(2010\)](#), define phonetics as the study of the sounds of one or several languages, to this conceptualization, we can deduce that all academic learning process starts from its pronunciation, the great geniuses and scientists began in classrooms imitating the sound of a cow to learn to pronounce the letter M and making faces to learn the P, on the other hand ([Bajaña, 2015](#)) maintains that, Phonetics analyzes the sounds of a language in a concrete realization, independent of the function. It is essentially the process that the human being undergoes to produce the various sounds that will later be used in speech.

However, phonetic deficiencies have been identified in adults and even professionals who cannot pronounce words correctly, this generates difficulties in the communication process, these variables can be caused by multiple factors, [González Morales & Larroza Lamilla \(2018\)](#), point out that phonological awareness and its incidence in the phoneme articulation process shows that 58.21% of students have difficulty in word segmentation and 38% substitute certain phonemes when speaking, these situations generate not very encouraging environments for the learning process, the psychological affectation and the little treatment of the problem prevent the correction of these patterns, before this panorama, [Salguero et al. \(2015\)](#), indicate that the identification of delays and/or disorders of language development with factors of risk and the importance of stimulation and early intervention for the application of preventive treatments eventive. The process of identifying patterns in the development of learning is vital to be able to treat cases of phonetic deficiency, in one of the investigations carried out at the Gutenberg Schule school to elementary basic general education students on curricular adaptations and literacy learning its author [Loza \(2018\)](#), identifies processes to identify patterns that make reading, writing and word pronunciation difficult, as well as approach methods.

After identifying the phonetic limitations, it is necessary to determine the state and percentage of deficiency, this will allow establishing the type of treatment and methodology to be implemented, in this context, ([Sotomayor et al., 2020](#)) propose a series of activities playful activities that allow developing and promoting expressive language at an early age, reducing learning disorders, enhancing skills and abilities, on the other hand ([Chamba & Chillogallo, 2019](#)) suggest the narrative to enhance oral language thanks to its high degree of effectiveness, Music and children's songs contribute greatly to phonetic development, however, the efficiency and methods of this resource are largely unknown by teachers, as they point out ([López & Nadal, 2018](#)).

According to what is expressed by the cited authors, it can be evidenced that the progress of the educational process being negligent with phonetic deficiencies can generate future problems, the objective of this scientific article is to determine the incidence of phonetics in the development of language in students. from 6 to 8 years of age of Educational Unit America. The methodology used is a documentary and correlational, qualitative, quantitative and analytical methods are applied, as well as the assessment of experts, finally, this process allows determining the level of incidence of phonetics in the development of language in students of elementary school.

2 Materials and Methods

The research design that has been used is the exploratory method and documentary research, the keywords for the search were established in different databases, both national and international. The quantitative method was used through a survey designed with specific questions to identify variables and the qualitative method in the analysis of the surveys allows the creation of a bank of factors that are debated through expert criteria and later qualified in a

Kendall matrix, the results allow us to evaluate the level of incidence of phonetics in language development and identify future problems in students with phonetic difficulties

3 Results and Discussions

Utilizing a documentary study, a bank of questions was elaborated which were directed to the teachers of the America Educational Unit, the results obtained are shown in figure 1, these indicate that 100% of the teachers know the type of phonetic methodology that is used in the institution since it is public, it follows the guidelines established by the Ministry of Education, which at the same time fulfils the function of a regulatory entity.

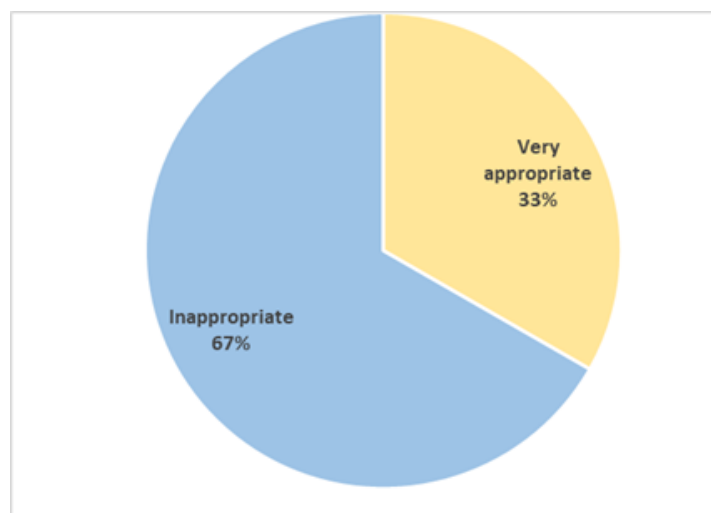


Figure 1. Perception of teaching techniques

The graph in figure 1 shows that 33.3% of teachers consider teaching techniques in the area of language and literature as very appropriate, while 66.7% consider them appropriate giving room for doubt and the possibility of exploring other alternatives, in the phonetic field the processes that are carried out are not always successful, generating gaps in the process, the most worrying fact to this situation is that little or nothing is done to correct. Due to this shortcoming, the current educational system is largely focused on fulfilling tasks, syllables, and planning, rather than on academic performance. Figure 2 shows the behaviour of phonetic development.

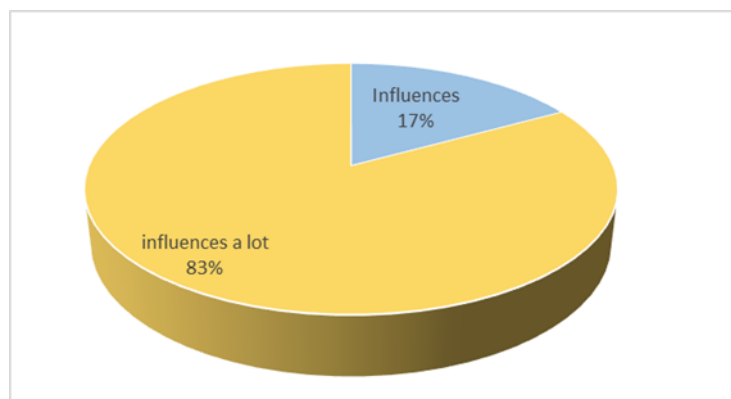


Figure 2. Influence of phonetic development on learning

It is observed that the sample shows that 83.3% of teachers agree on the importance of phonetic development in the first years of studies to language development, and 16.7% consider its influence leaving room for doubt, in this

parameter, the perception of the influence of phonetics in the early ages is overwhelming. Figure 3 analyzes the influence of phonetic performance on the learning process

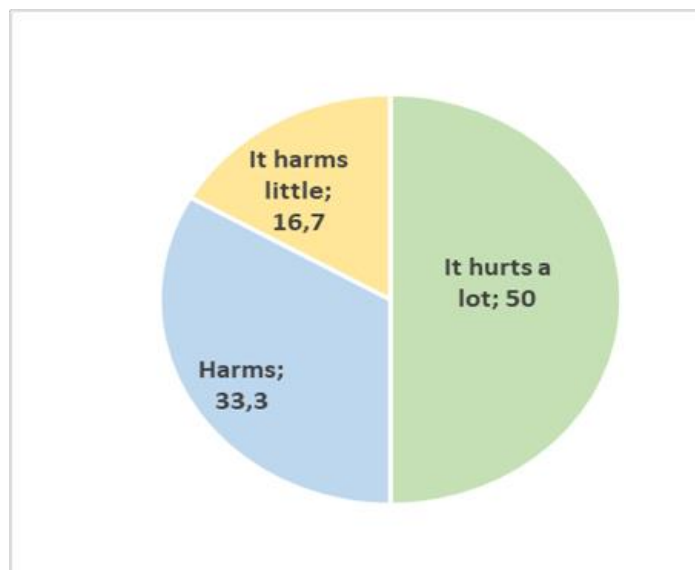


Figure 3. Incidence of low phonetic performance in learning

As can be seen, evidence that 50% of teachers consider that low phonetic performance greatly harms the learning process, this to communication, psychological and academic problems, 33.3% consider that it harms and affects moderately and 16.7% consider that it harms little, and this element is not of greater relevance in the learning process. An analysis related to the practice of teachers in the development of reading strategies was carried out, showing the results in figure 4.

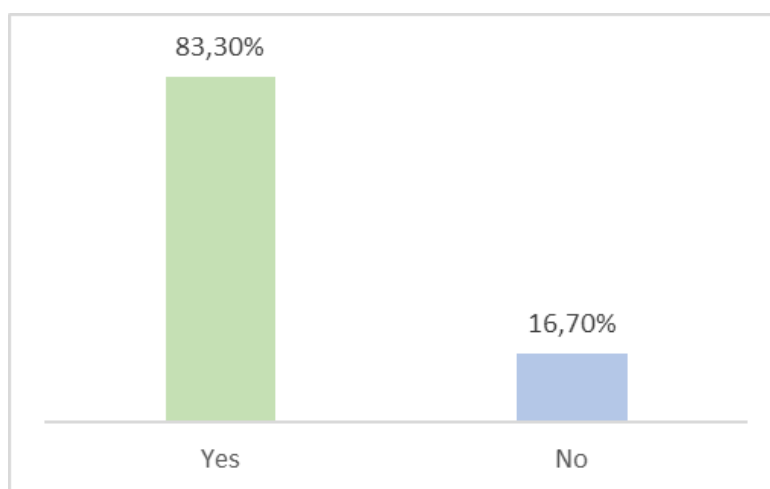


Figure 4. Teachers who develop reading strategies

As seen, 83.3% of teachers develop reading strategies to improve the phonetic process of their students, and 16.7% develop strategies when the situation warrants it, this depends on the fact that each classroom has its characteristics and qualities, however, the strategies are not improvised, they respond to the experience and the application of various methodologies throughout teaching. The current problems in phonetic development were investigated, as shown in figure 5.

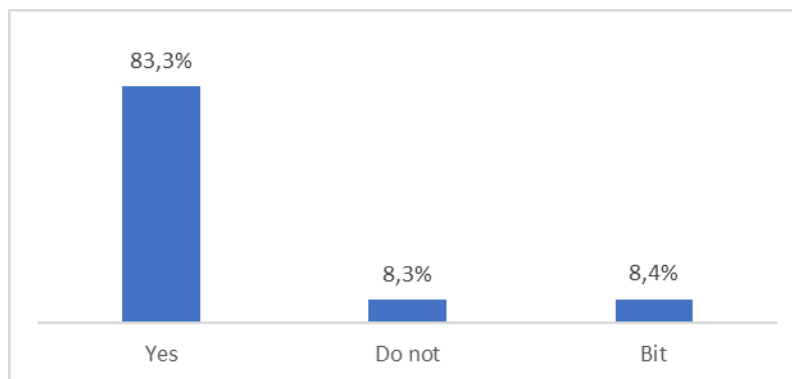


Figure 5. Contribution of current methods to phonetic development

It is observed in figure 5 that 83.3% of teachers consider that current teaching methods contribute directly to phonetic development, while 8.3% consider that these methods contribute very little and 8.4% consider that orthodox methods are better, with these results it is evident that the processes of academic improvement in the linguistic context have improved considerably in recent years, the research and tools developed, as well as new methodologies, give way to the opening of better opportunities in search of equity during the learning process. Judith Johnston of Columbia University (2010) in her research on the factors that affect language development, identifies 5 variables that directly influence language development, these are; the social environment, the capacity for perception, the cognitive processes, the conceptual approach and the linguistic development, these variables directly affect the student based on the following criteria.

Social environment

The influence of this variable is subject to the type of environment in which the student grows, this segment is made up of the family, the neighbourhood, friends, colleagues and region, this type of influence is external and acquires great connotation in the development of language, considering that children acquire ways and customs of their environment closest, in some cases this variable is decisive for the rest of a person's life, however, as they have another type of social contact, be it school, university or work, new modes and forms of expression are acquired.

Perception capacity

This variable has a specific approach to the environment and expectations that are generated in a child, idealization and imagination drastically affect children's language, in this sense we find children who are more open and tend to participate in conversations such as their dialogues make no sense, the relationship between what the child perceives and what he assimilates has a great impact on the development of his language (Suryasa & Dewi, 2018).

Cognitive processes

Children tend to make minor verbal errors, and language development is related to the child's mental resources, to achieve cognitive development, articulated and planned learning and development processes are used, these help rapid learning, for stimulation methods, are used such as; recreational activities, games, dynamics, songs, musical, artistic tools, among others, these techniques accelerate the learning process and influence the action of communicating and relating to others, this segment has a high degree of importance, to the point that many children through these activities usually find their intelligence developed in art, music, sports and other professions related to the techniques used (Ceri et al., 2000; Chakravarthy & Mishra, 1994).

Conceptual approach

A weighting of variables related to the mental age of the child was carried out, the results are shown in Table 1.

Table 1
The weighting of variables by age

VARIABLES	E 1	E 2	E 3	E 4	E 5	E 6	E 7	E 8	E 9	E 10	T	\geq \leq	%	INCIDENCE (%)
1 Social environment	4	4	5	4	4	5	4	4	4	4	42	<43	-2%	19.53
2 Perception capacity	5	5	4	4	5	4	4	4	5	5	45	>43	5%	20.93
3 Cognitive processes	5	4	4	5	4	5	4	4	4	5	44	>43	2%	20.47
4 Conceptual approach	4	4	3	4	4	3	4	3	4	4	37	<43	-14%	17.21
5 Linguistic development	5	5	5	4	5	4	5	5	4	5	47	>43	9%	21.86
TOTAL											215			
Σ											43.			
											0			

Conceptualization depends on the mental age of the child, the ability to articulate words and conformation of sentences arises from the mental construction and experience of the topics to be discussed, and the skills are limited by the knowledge of general culture and the relationship with what is being expressed, we have that those children who have more knowledge have better answer options and arguments.

Linguistic development

Starting from the concept of linguistics on the study of the origin, structure, and evolution of language, we understand that linguistic development is subject to the individual's ability to communicate with each other, in this segment we find phonetic development as one of the main variables, being its branches: articulatory, acoustic and auditory or perceptive phonetics, the incidence of this variable is significant in the construction of language. Based on the 5 variables described, the expert criteria tool was applied, consulting 8 language teachers from different institutions with a minimum of 15 years of experience and 2 principals from schools in the Chone canton, the weighting of his criteria using a Kendall matrix, showing the following statistics. The application of the expert criteria tool makes it possible to show the level of incidence and the arithmetic mean to delve into the variables that exceed the base, in this case, the mean is 43, as shown in figure 6.



Figure 6. The weighting of variables - expert criteria

The qualifications registered by the experts in the Kendall matrix allow establishing an arithmetic mean of 43 points, with this information the variables that are subject to analysis are identified, these being those that exceed the average range; Cognitive processes with 44, perceptual capacity with 45 and linguistic development with 47 points, in this context, the study focuses on the one that obtains the highest score for the development of analysis and discussion. Figure 7 shows the determining variable.

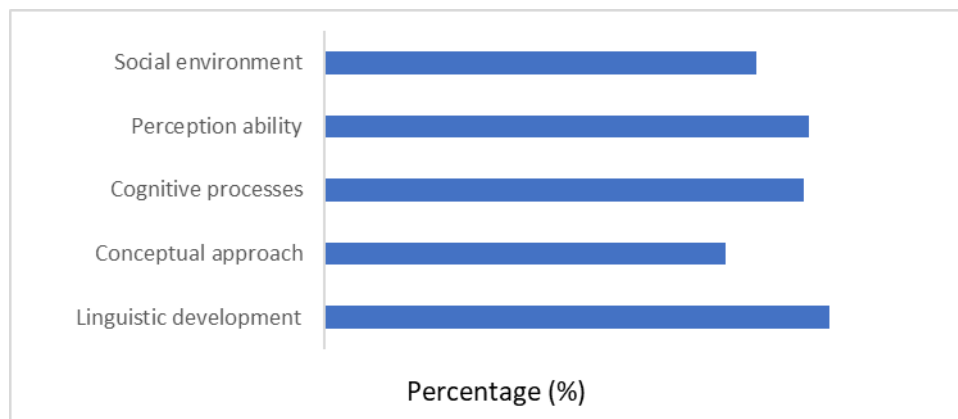


Figure 7. Determining variable

The determining variable and the most incident in the learning process is linguistic development with 94% of points, followed closely by the variable of the capacity of perception and the cognitive processes, these 3 variables obtained the highest qualification, which is why they are subject to analysis and discussion (Hänze & Berger, 2007; Lin et al., 2003). Linguistic development includes phonetic and phonological processes in language development, both processes complement each other, while phonetics studies the phones of speech in general, phonology studies the production of phonemes, together they give way to pronunciation and language according to their language, in this context, the results show that the linguistic variable has the highest incidence in language development with 21.86% participation, this suggests a greater emphasis on this segment during the training process, (Bajaña, 2015) in his work on phonetic articulation and its impact on students' reading fluency concludes that it is of great importance that children from an early age develop phonetic articulation, this allows a correct sound to phonemes and meaning, to words allowing students to gain reading fluency.

Pavez et al. (2009), in their study on phonological development in children from 3 to 6 years old, suggest that at an early age phonological simplification processes can be generated in the emission of words that, if not controlled, could generate complications in the pronunciation of individuals in adult ages, on the other hand, (Gutierrez, 2003) determines that the incidence of acoustic - perceptual deficit in language development is high and is directly related to phonetic processes in students, which is why it requires urgent attention, this is because the manifestation of phonological difficulties usually bring with them a delay in other linguistic levels, probably more profoundly in lexical development, considering that phonological memory can be decisive in the acquisition and recall of the vocabulary (Foulkes & Docherty, 2006; Aoyama et al., 2004).

The phonological deficiency can bring serious consequences for the individual, this situation can generate complications in oral expression permanently, in the case of the presence of infantile dyslalia the psychological affectations are usually severe, Conde-Guzón et al. (2014), in their research on the neuropsychological profile of children with dyslalias, identify that individuals who present this pathology show "mnestic and attentional problems similar to children with language problems secondary to brain damage or affectations important organic or psycholinguistics" also suggest providing neuropsychological and psycho-pedagogical support at the school level.

Lorenzo (2011), The incidence of phonetics in the development of language is fundamental, indispensable and decisive, negligence in the face of phonetic deficiencies can generate consequences that range from permanent pronunciation problems to psychological damage to people, and immediate intervention must be taken to avoid delays of the child in other educational areas, the intervention must be carried out after the identification of the type of deficiency or disorder present, subsequently to prepare a linguistic diagnosis and periodically evaluate the progress during the process, on the other hand, a good phonetic performance from an early age strengthens children's confidence and sets the tone for the development of other skills and talents such as oratory, poetry and even singing (Yip, 2006; Dinnsen & Eckman, 1978).

Regarding the perceptual capacity variable, a 20.93% incidence is evidenced, this percentage is relatively high and quite close to the dependent variable, in this context, Lorenzo (2011), in his study on phonological dyslexia defines it as the disorder in reading manifested as the inability to recognize the dependency between the phonic and orthographic structure, preventing the manipulation of phonemes in words orally, a limited perception initially generates distrust in the child, followed by fear of the little security that he feels when interpreting a reading, text or

even the transmission of a previously heard message, as in dyslalia, dyslexia is easily identifiable at an early age and a timely intervention will allow these unfavourable conditions to be overcome (Haswadi et al., 2018).

Cognitive processes are intrinsically related to the ability to perceive, which is responsible for receiving information and generating an expectation around it and the cognition of its processing based on mental operations of the brain, therefore, not it is surprising that the incidence of this variable is 20.47%, being relatively close to the second highest score, Lozano-González & Lozano-Fernández (1999), in their work on the evaluation and treatment of phonological dyslexia suggest processes identification of difficulties in the metalinguistic field and recurrent errors around deficiencies in the phonological process, they then recommend the use of cognitive stimuli with games, songs, riddles and playful activities specifically designed for this pathology and applied by a professional.

4 Conclusion

Phonetics directly affects the development of language in students, reaching the level of repercussions favourably or unfavourably depending on the case, therefore, phonetic processes are essential in all human beings, and their correct application and stimulation can promote the development of other areas during the student's growth. It is important as a starting point to solve linguistic problems the identification of phonetic deficiencies and/or other limitations, will allow diagnosing and establishing the type of treatment or procedure to treat the deficiency, language problems significantly affect the learning process of other academic branches at school and college age, neglect can severely affect the way and style of student learning. The use of cognitive stimuli and playful activities for the treatment of linguistic deficiencies emerges as a viable and efficient alternative, based on a good diagnosis, strategies and methods can be designed according to need, developing efficient stimuli for language development and manuals or guides for teachers who find these boxes in their students.

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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References

- Aoyama, K., Flege, J. E., Guion, S. G., Akahane-Yamada, R., & Yamada, T. (2004). Perceived phonetic dissimilarity and L2 speech learning: The case of Japanese/r/and English/l/and/r. *Journal of Phonetics*, 32(2), 233-250. [https://doi.org/10.1016/S0095-4470\(03\)00036-6](https://doi.org/10.1016/S0095-4470(03)00036-6)
- Bajaña, V. V. (2015). Articulación fonética y su incidencia en la fluidez lectora de los estudiantes de la unidad educativa ricaurte, cantón urdaneta, provincia los ríos. Babahoyo: Repositorio de la Universidad Técnica de Babahoyo.
- Brenowitz, N., & Tuttle, C. R. (2003). Development and testing of a nutrition-teaching self-efficacy scale for elementary school teachers. *Journal of nutrition education and behavior*, 35(6), 308-311. [https://doi.org/10.1016/S1499-4046\(06\)60345-X](https://doi.org/10.1016/S1499-4046(06)60345-X)
- Ceri, S., Fraternali, P., & Bongio, A. (2000). Web Modeling Language (WebML): a modeling language for designing Web sites. *Computer Networks*, 33(1-6), 137-157. [https://doi.org/10.1016/S1389-1286\(00\)00040-2](https://doi.org/10.1016/S1389-1286(00)00040-2)
- Chakravarthy, S., & Mishra, D. (1994). Snoop: An expressive event specification language for active databases. *Data & Knowledge Engineering*, 14(1), 1-26. [https://doi.org/10.1016/0169-023X\(94\)90006-X](https://doi.org/10.1016/0169-023X(94)90006-X)
- Chamba, R. L., & Chillogallo, O. J. (2019). El cuento infantil en el desarrollo del lenguaje oral en niños del primer grado de educación general básica. *Dominio de las ciencias*, 697 - 711.
- Conde-Guzón, P., Quirós-Expósito, P., Conde-Guzón, M. J., & Bartolomé-Albistegui, M. T. (2014). Perfil neuropsicológico de niños con dislalias: alteraciones mnésicas y atencionales. *Anales de psicología*, 1105 - 1114.
- Dinnsen, D. A., & Eckman, F. R. (1978). Some substantive universals in atomic phonology. *Lingua*, 45(1), 1-14. [https://doi.org/10.1016/0024-3841\(78\)90017-7](https://doi.org/10.1016/0024-3841(78)90017-7)
- Foulkes, P., & Docherty, G. (2006). The social life of phonetics and phonology. *Journal of phonetics*, 34(4), 409-438. <https://doi.org/10.1016/j.wocn.2005.08.002>
- González Morales, A. M., & Larroza Lamilla, M. N. (2018). Conciencia fonológica y su incidencia en el proceso de articulación de fonemas en los estudiantes de básica elemental de la Escuela de Educación Básica "Gabriela Mistral". Guayaquil: Repositorio de la Universidad de Guayaquil.
- Gutierrez, C. E. (2003). La incidencia del déficit acústico-perceptivo en el trastorno específico del desarrollo del lenguaje. *Educere*, 26 - 32.
- Hänze, M., & Berger, R. (2007). Cooperative learning, motivational effects, and student characteristics: An experimental study comparing cooperative learning and direct instruction in 12th grade physics classes. *Learning and instruction*, 17(1), 29-41. <https://doi.org/10.1016/j.learninstruc.2006.11.004>
- Haswadi, M., Syarifudin, .-, & Rusdiawan, .-. (2018). Children Phonological Acquisition for 3 to 5-Year-Olds. *International Journal of Linguistics, Literature and Culture*, 4(1), 16-21.
- Kibbe, D. L., Hackett, J., Hurley, M., McFarland, A., Schubert, K. G., Schultz, A., & Harris, S. (2011). Ten Years of TAKE 10!@: Integrating physical activity with academic concepts in elementary school classrooms. *Preventive medicine*, 52, S43-S50. <https://doi.org/10.1016/j.ypmed.2011.01.025>
- Lin, Y. G., McKeachie, W. J., & Kim, Y. C. (2003). College student intrinsic and/or extrinsic motivation and learning. *Learning and individual differences*, 13(3), 251-258. [https://doi.org/10.1016/S1041-6080\(02\)00092-4](https://doi.org/10.1016/S1041-6080(02)00092-4)
- López, C. M., & Nadal, G. I. (2018). La estimulación auditiva a través de la música en el desarrollo del lenguaje en educación infantil. *Revista Electrónica de Investigación y Docencia (REID)*, 107 - 124.
- Lorenzo, J. R. (2011). Academia.edu. Obtenido de Dislexia fonológica: https://d1wqtxts1xzle7.cloudfront.net/56948499/4_Dislexia_fonologica-with-cover-page-v2.pdf?Expires=1650493079&Signature=F0gQnScq0LBpS9CH2psq65x-
- Loza, L. J. (2018). Adaptaciones curriculares y el aprendizaje de lectoescritura en estudiantes de educación general básica elemental del Colegio Gutenberg Schule. Quito: Repositorio de la Universidad Andina Simón Bolívar .
- Lozano-González, L., & Lozano-Fernández, L. M. (1999). Evaluación y Tratamiento de la Dislexia fonológica. *Aula Abierta*, 131 - 149.
- Moreno Fernández, F. (2015). La importancia internacional de las lenguas. *Informes del Observatorio*. Obtenido de https://cervantesobservatorio.fas.harvard.edu/sites/default/files/010_informes_importancia_internacional_lenguas_0.pdf
- Pavez, M., Maggiolo, M., Peñaloza, C., & Carmen, J. (2009). Desarrollo fonológico en niños de 3 a 6 años: Incidencia de la edad, el género y el nivel socioeconómico. *R.L.A. - Revista Lingüística Teórica y Aplicada*, 89 - 109.

- Salguero, S. M., Álvarez, A. Y., Verane, D. D., & Santelices, J. B. (2015). El desarrollo del lenguaje. Detección precoz de los retrasos/ trastornos en la adquisición del lenguaje. *Revista Cubana de Tecnología de la Salud*, 43 - 57.
- Schwegler, A., Kempff, J., & Ameal-Guerra, A. (2010). *Fonética y fonología española*. España: Jhon Wiley & Sons, Inc.
- Sotomayor, L. K., Merizalde, Y. N., & Borja, O. J. (2020). Programa de actividades lúdicas para estimular el desarrollo del lenguaje expresivo en niños de 3 años. *Dominio de las Ciencia*, 324 - 339.
- Suryasa, I. W., & Dewi, A. A. S. C. (2018). Language maintenance of Balinese vocabulary in agriculture: Eco linguistic studies. *International Journal of Linguistics, Literature and Culture*, 4(4), 38-43. <https://doi.org/10.21744/ijllc.v4n4.258>
- Yip, M. J. (2006). The search for phonology in other species. *Trends in cognitive sciences*, 10(10), 442-446. <https://doi.org/10.1016/j.tics.2006.08.001>