Logo Program To Strengthen Phonological Awareness In 5 Year-Old Children Of Educational Institutions In Peru

Ambrocio Teodoro Esteves Pairazamán, Víctor Hugo Fernández Bedoya, Walter Gregorio Ibarra Fretell, Rosario Violeta Grijalva Salazar

Abstract: The objective of this investigation was to confirm the effects of the application of the speech-therapy program to strengthen phonological awareness in children of 5 years of educational institutions in Lima, Peru. A sample of 353 children has been obtained from eight educational institutions selected by convenience. A pre-test was applied, which was then contrasted by a post-test, both measuring a total of seven tests related to phonological awareness, in addition to chi-square tests in order to confirm the hypothesis, which was. It was concluded that the speech-therapy program strengthens positively in phonological awareness in children of 5 years of educational institutions.

Index Terms: , Logo program, speech-therapy, phonological awareness, language, speaking, Peru.

1. INTRODUCTION

Learning disorders, school failure and difficulties in social and labour insertion often begin with speech and language development disorders [1], [2], [3]. These estimates suggest that the speech and language delays that occur in early childhood are a common problem that has important implications for children with different behaviors and psychosocial aspects.

2 PROBLEM STATEMENT

It seems unquestionable that language and speech constitute one of the main tools that children have to handle when they arrive at school [4], [5], however, it is a very common fact to find a large number of children who present difficulties in communicative and linguistic development throughout schooling. When nursery and primary school teachers are asked about the main problem in their classrooms, their answer is usually: the deficit of language and speech. In this way, the concern for the acquisition and development of language and speech tends to be generalized among teachers, psychopedagogues, speech therapists and parents, as it is a vital instrument for the life of the child [6], [7], [8]. In this sense, the level of phonological awareness that a child presents during the initial stages of the literacy process, that is, preschool, initial and first grade levels, is the main predictor of the reading level that he or she will reach during the subsequent years of primary education [9]. It is indispensable to strengthen children's abilities during their first years of life, since these have a central impact on the development of intelligence, personality and social behaviour in their later years, as well as continuity in subsequent studies [10], [11], [12], [13]. This raises the concern of this study, which allows us to know the extent to which the application of a speech therapy program can influence the results of language and speech that can achieve pre-school children. In view of this, the researchers formulate the following research problem: What are the effects of the speech therapy program and its influence on strengthening phonological awareness in 5-year-old children in educational institutions in Lima, Peru?

- *Ambrocio Teodoro Esteves Pairazamán. Teacher at Universidad César Vallejo. Email: diosteama774@hotmail.com*
- *Víctor Hugo Fernández Bedoya. Teacher at Universidad César Vallejo. Teacher at Universidad Nacional Mayor de San Marcos. Email: victorhugofernandezbedoya@gmail.com*
- *Walter Gregorio Ibarra Fretell. Teacher at Universidad César Vallejo. Teacher at Universidad Autónoma del Perú. Teacher at Universidad Nacional Federico Villarreal. Email: walteribarrafretell@gmail.com*
- *Rosario Violeta Grijalva Salazar. Teacher at Universidad César Vallejo. Teacher at Universidad Nacional Federico Villarreal. Email: rosariogrijalva@outlook.com.pe*

3 JUSTIFICATION OF THE STUDY AND HYPOTHESIS

Studies have shown that speech-language programs improve phonological awareness in preschool children. The planning, elaboration, execution, processing and evaluation of the speech therapy program in the 5-year-old children of educational institutions in Lima, Peru, could be very useful, in the first instance, for the children, who will be the main beneficiaries of this research, since the results will immediately result in their communicative and linguistic development. It is also of practical use for teachers in schools not only in Peru, but also in other Spanish-speaking countries, who will be able to access this research in order to take advantage of the methodological strategies presented in order to consider them and apply them in their daily pedagogical work and to apply them to future research. Finally, the results of this research may be used by the directors of various schools, who are constantly searching for relevant information in their desire to generate innovation [14]. For these reasons, the present research was carried out in which a speech therapy program was applied in 5-year-old children from educational institutions in Lima, Peru, with the purpose of demonstrating that this program has a positive influence on phonological awareness in children. The relevance of the speech therapy program in pre-school age is very significant since it allows the infant to develop basic skills for learning reading and speaking, and also allows communicative and linguistic development throughout the entire stage of schooling. Therefore, it becomes a contribution to the educational community, because it is a scientific work and because there is currently no research at the local and national level on speech therapy in pre-school children.

General hypothesis:

H_1: Speech therapy program positively strengthens phonological awareness in 5-year-old children in educational institutions in Lima, Peru

Specific hypotheses:

H_2: The speech therapy program significantly raises the performance of phonological awareness of 5-year-old children from educational institutions in Lima, Peru.

H_3: The speech therapy program significantly improves phonological awareness in 5-year-old children at educational institutions in Lima, Peru.

4 METHODOLOGY

The research is of explanatory type, because it explains the independent variable (speech therapy program) on the dependent variable (phonological awareness). The essence of this conception of experiment is that it requires the intentional manipulation of an action to analyze its possible results [15]. This research will use quantitative methodology, using an experimental design with pre- and post-test. A sample of 353 people was obtained, who are children of 5 that are in the preschool stage, belonging to 6 educational institutions located in Lima, Peru, and to which a pre-test and post-test was applied, using the logopedia program, in order to evaluate if this strengthens the phonological conscience of these children. The data collection techniques and instruments applied are as follows:

4.1 Consistency Test

This is an image naming test to determine the degree of consistency of pronunciation errors. Pronunciation is consistent when the same word is pronounced in the same way - that is, when it is correct and pronunciation is inconsistent when the same word is pronounced in different [16]

4.2 Phonological Simplification Process Evaluation Test, TEPROSIF-R

This test evaluates phonological development from the point of view of natural phonology, i.e. the phonological processes of simplification decrease with development until they disappear completely around the age of 6. It allows to verify the existence of the 3 types of basic phonological processes: substitution, assimilation and syllable structure [17].

4.3 TEL Test (Specific Language Disorders)

This test evaluates Metalinguistic, phonological-type skills in preschool children. This test consists of 6 subtests, each composed of nine items [18], of which each corresponds to the example, are organized according to the degree of difficulty (from lowest to highest), in the following sequence:

a) Final sounds of the words. - The objective of which is to identify the sound of each word.
b) Initial sounds of the words. - Its objective is to identify the vocal or consonant sound of the word.
c) Syllabic segmentation of words. - Its objective is to identify the number of syllables of each word.
d) Inversion of the syllables of the words. - It consists of recognizing the syllables that make up each word.
e) Sounds of the letters. - Try to associate the phoneme with its respective grapheme.
f) Phonemic synthesis of words*. - Recognize the phonemes that make up a word and its sequence.

*It should be noted that in this study was not applied this last subtest (phonemic synthesis of words), due to the high complexity of the test. It is necessary to indicate that the data will be processed from Excel spreadsheets in the SPPS program. In these spreadsheets were recorded: case number, age and results in terms of type and number of simplification phonological processes (P.F.S) produced by children in the consistency test, in the TERPOSIF-R test and for the TEL test. In order to give reliability to the instrument, the Cronbach Alfa was used with the method of variances and a reliability of 0.849 was obtained, which qualifies it as highly reliable.

5 RESULTS

The results of the pre-test and post-test tests for each of the six tests applied to the sample (consistency test, evaluation test of phonological simplification processes, initial sounds of words, final sounds of words, syllabic segmentation of words, syllabic inversion of words, sound of letters) will then be presented, in addition, the sum of maximum and minimum successes will be shown in order to give greater clarity to the results before and after the application of the speech therapy program to strengthen phonological awareness in children of 5 years of age from educational institutions in Lima; finally, another statistical analysis will be carried out to contrast the hypothesis, by means of the chi-square test.

5.1 Consistency Test Results

According to TABLE 1, it can be observed that: when applying the pre-test, to the sample of 353 students, the minimum successes obtained were 02, the maximum successes obtained were 14, being the range of the same 12, the arithmetic mean is 8.14, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 7.5, that is, the semisum of the central values, the mode is 5, that is, the most frequent value in the data set. The standard deviation is: 3.68. The coefficient of variation is: 0.11%.On the other hand, and also according to TABLE 1, it can be observed that: when applying the post test to the sample of 353 students, the minimum successes obtained were 08, the maximum successes obtained were 22, being the range of the same 14, the arithmetic mean is 16.21, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 14.5, that is, the semisum of the core values, the mode is 13, that is, the most frequent value in the data set. The standard deviation is: 4.90. The coefficient of variation is: -0.06%.

TABLE 1

CONSISTENCY TEST RESULTS - PRE-TEST AND POST TEST

Statistics	Pre-test	Post-test
Minimal successes	2	8
Maximum successes	14	22
Range	12	14
Arithmetic mean	8.14	16.21
Medium	7.5	14.5
Mode	5	13
Standard deviation	3.68	4.9
Coefficient of variation	0.11	-0.06
N	353	353

Elaboration: The authors.
Source: The authors.

5.2 Results of the evaluation test of phonological simplification processes

According to TABLE 2, it can be observed that: when applying

the pre-test to the sample of 353 students, the minimum successes obtained were 08, the maximum successes obtained were 33, being the range of the same 25, the arithmetic mean is 21.71, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 17, that is, the semisum of the central values, the mode is 14, that is, the most frequent value in the data set. The standard deviation is: 9.35. The coefficient of variation is: 0.16%.On the other hand, and also according to TABLE 2, it can be observed that: when applying the post test to the sample of 353 students, the minimum successes obtained were 17, the maximum successes obtained were 30, being the range of the same 13, the arithmetic mean is 23.86, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 24.5, that is, the semisum of the central values, the mode is 28, that is, the most frequent value in the data set. The standard deviation is: 4.11. The coefficient of variation is: -0.32%.

TABLE 2

RESULTS OF THE EVALUATION TEST OF PHONOLOGICAL SIMPLIFICATION PROCESSES

Statistics	Pre-test	Post-test
Minimal successes	8	17
Maximum successes	33	30
Range	25	13
Arithmetic mean	21.71	23.86
Medium	17	24.5
Mode	14	28
Standard deviation	9.35	4.11
Coefficient of variation	0.16	-0.32
N	353	353

Elaboration: The authors.
Source: The authors.

5.3 TEL test results - sub test 01 final sounds of words

According to TABLE 3", it can be observed that: when applying the pre test, to the sample of 353 students, the minimum successes obtained were 01, the maximum successes obtained were 5, being the range of the same 4, the arithmetic mean is 3.57, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 3.5, that is, the semisum of the central values, the mode is 3, that is, the most frequent value in the data set. The standard deviation is: 1.22. The coefficient of variation is: -0.49%.On the other hand, and also according to TABLE 3, it can be observed that: when applying the post test to the sample of 353 students, the minimum successes obtained were 08, the maximum successes obtained were 10, being the range of the same 2, the arithmetic mean is 6.65, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 8.5, that is, the semisum of the central values, the mode is 8, that is, the most frequent value in the data set. The standard deviation is: 0.83. The coefficient of variation is: 0.69%.

TABLE 3

TEL TEST RESULTS - SUB TEST 01 FINAL SOUNDS OF WORDS

Statistics	Pre-test	Post-test
Minimal successes	1	8
Maximum successes	5	10
Range	4	2
Arithmetic mean	3.57	6.65
Medium	3.5	8.5
Mode	3	8
Standard deviation	1.22	0.83
Coefficient of variation	-0.49	0.69
N	353	353

Elaboration: The authors.
Source: The authors.

5.4 TEL test results - sub test 02 initial sounds of words

According to TABLE 4, it can be observed that: when applying the pre test, to the sample of 353 students, the minimum successes obtained were 00, the maximum successes obtained were 7, being the range of the same 7, the arithmetic mean is 3.43, the one that we obtained when adding all the notes of the test and dividing them between the sample (353 students). The median is 3.5, that is, the semisum of the central values, the mode is 3, that is, the most frequent value in the data set. The standard deviation is: 1.45. The coefficient of variation is: -0.89%.On the other hand, and also according to TABLE 4, it can be observed that: when applying the post test to the sample of 353 students, the minimum successes obtained were 04, the maximum successes obtained were 15, being the range of the same 11, the arithmetic mean is 7.50, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 7, that is, the semisum of the central values, the mode is 7, that is, the most frequent value in the data set. The standard deviation is: 3.53. The coefficient of variation is: 0.85%.

TABLE 4

TEL TEST RESULTS - SUB TEST 02 INITIAL SOUNDS OF WORDS

Statistics	Pre-test	Post-test
Minimal successes	0	4
Maximum successes	7	15
Range	7	11
Arithmetic mean	3.43	7.50
Medium	3.5	7
Mode	3	7
Standard deviation	1.45	3.53
Coefficient of variation	-0.89	0.85
N	353	353

Elaboration: The authors.
Source: The authors.

5.5 Results of the TEL test - sub-test 03 syllable segmentation of words

According TABLE 5, it can be observed that: when applying the pre-test to the sample of 353 students, the minimum successes obtained were 00, the maximum successes obtained were 7, being the range of the same 7, the arithmetic mean is 2.14, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 1.5, that is, the semisum of the central values, the mode is 1, that is, the most frequent value in the data set. The standard deviation is: 2.28. The coefficient of variation is: 1.47%.On the other hand, and also according to TABLE 5, it can be observed that: when applying the post test, to the sample of 353 students, the minimum successes obtained were 03, the maximum successes obtained were 12, being the range of the same 9, the arithmetic mean is 5.40, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 6, that is, the semisum of the central values, the mode is 4, that is, the most frequent value in the data set. The standard deviation is: 2.84. The coefficient of variation is: 0.82%.

TABLE 5

RESULTS OF THE TEL TEST - SUB-TEST 03 SYLLABLE SEGMENTATION OF WORDS

Statistics	Pre-test	Post-test
Minimal successes	0	3
Maximum successes	7	12
Range	7	9
Arithmetic mean	2.14	5.40
Medium	1.5	6
Mode	1	4
Standard deviation	2.28	2.84
Coefficient of variation	-1.47	0.82
N	353	353

Elaboration: The authors.
Source: The authors.

5.6 TEL test results - sub test 04 inversion of words

According to TABLE 6, it can be observed that: when applying the pre test to the sample of 353 students, the minimum successes obtained were 01, the maximum successes obtained were 5, being the range of the same 4, the arithmetic mean is 2.12, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 3, that is, the semisum of the central values, the mode is 2, that is, the most frequent value in the data set. The standard deviation is: 1.33. The coefficient of variation is: 0.35%. On the other hand, and also according to TABLE 6, it can be observed that: when applying the post test to the sample of 353 students, the minimum successes obtained were 01, the maximum successes obtained were 5, being the range of the same 4, the arithmetic mean is 3.00, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 3, that is, the semisum of the central values, the mode is 3, that is, the most frequent value in the data set. The standard deviation is: 1.30. The coefficient of variation is: 0.00%.

TABLE 6

TEL TEST RESULTS - SUB TEST 04 INVERSION OF WORDS

Statistics	Pre-test	Post-test
Minimal successes	1	1
Maximum successes	5	5
Range	4	4
Arithmetic mean	2.12	3.00
Medium	3	3
Mode	2	3
Standard deviation	1.33	1.30
Coefficient of variation	0.35	0.00
N	353	353

Elaboration: The authors.
Source: The authors.

5.7 TEL test results - sub test 05 letter sounds

According to TABLE 7, it can be observed that: when applying the pre test, to the sample of 353 students, the minimum successes obtained were 00, the maximum successes obtained were 4, being the range of the same 4, the arithmetic mean is 1.93, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 2, that is, the semisum of the central values, the mode is 3, that is, the most frequent value in the data set. The standard deviation is: 1.33. The coefficient of variation is: -0.31%.On the other hand, and also according to TABLE 7, it can be observed that: when applying the post test to the sample of 353 students, the minimum successes obtained were 00, the maximum successes obtained were 8, being the range of the same 8, the arithmetic mean is 3.40, which we obtained by adding all the test scores and dividing them among the sample (353 students). The median is 3.5, that is, the semisum of the central values, the mode is 5, that is, the most frequent value in the data set. The standard deviation is: 2.32. The coefficient of variation is: 0.53%.

TABLE 7

TEL TEST RESULTS - SUB TEST 05 LETTER SOUNDS

Statistics	Pre-test	Post-test
Minimal successes	0	0
Maximum successes	4	8
Range	4	8
Arithmetic mean	1.93	3.40
Medium	2	3.5
Mode	3	5
Standard deviation	1.33	2.32
Coefficient of variation	-0.31	0.53
N	353	353

Elaboration: The authors.
Source: The authors.

5.8 Sum of maximum and minimum hits

Next, a comparison will be made of the results before and after the application of the speech therapy program to strengthen phonological awareness in 5 year old children from educational institutions in Lima. As can be seen in TABLE 8, the cumulative results of the minimum and maximum marks (seven tests) are much higher in the post test than in the pre-test.

TABLE 8

SUM OF MAXIMUM AND MINIMUM HITS

Statistics	Sum of Pre-test	Sum pf Post-test
Minimal successes	12	41
Maximum successes	75	102

Elaboration: The authors.
Source: The authors.

5.9 Chi-square test to contrast general hypothesis (H_1)

Lines below, TABLE 9 shows how the chi-square test will be analyzed to contrast the general hypothesis (H_1): The speech therapy program positively strengthens phonological awareness in 5-year-old children from educational institutions in Lima, Peru.

TABLE 9

CHI-SQUARE TEST TO CONTRAST GENERAL HYPOTHESIS (H_1)

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	185.142[a]	62	0.000
Likelihood ratio	165.337	62	0.000
Linear-by-linear association	43.999	1	0.000
N of valid cases	353		

Elaboration: The authors.
Source: The authors.

When performing the general hypothesis test, with the chi-square test, it is observed that there is an association between the speech therapy program strategies variable and the variable raises phonological awareness, because the caliculated chi (43.999) is greater than the chi table (3.8415). Also, for the hypothesis test that is claimed because the sig.value is 0.000, less than 0.05, therefore, the general

hypothesis (H_1) is accepted: The speech therapy program positively strengthens phonological awareness in 5-year-old children of educational institutions in Lima, Peru.

5.10 Chi-square test to contrast specific hypothesis (H_2)

Lines below, TABLE 10 shows how the chi-square test will be analyzed to contrast the specific hypothesis (H_2): The speech therapy program significantly boosts the performance of phonological awareness of 5-year-old children from educational institutions in Lima, Peru.

TABLE 10

CHI-SQUARE TEST TO CONTRAST SPECIFIC HYPOTHESIS (H_2)

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	161.157[a]	97	0.000
Likelihood ratio	139.160	97	0.000
Linear-by-linear association	29.964	1	0.017
N of valid cases	353		

Elaboration: The authors.
Source: The authors.

When performing the specific hypothesis test (H_2), with the chi-square test, it is observed that there is an association between the program variable of speech therapy and the variable raises phonological awareness, because the calculated chi (29.964) is greater than chi table (3.8415). Also, the hypothesis test is affirmed because the sig.value is 0.000, less than 0.05, therefore, the specific hypothesis (H_2) is accepted: The speech therapy program significantly raises the phonological awareness of 5-year-old children from educational institutions in Lima, Peru.

5.11 Chi-square test to contrast specific hypothesis (H_3)

Lines below, TABLE 11 shows how the chi-square test will be analyzed to contrast the specific hypothesis (H_3): The speech therapy program significantly improves phonological awareness in 5-year-olds at educational institutions in Lima, Peru.

TABLE 11

CHI-SQUARE TEST TO CONTRAST SPECIFIC HYPOTHESIS (H_3)

Elaboration: The authors.

	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	118.341[a]	96	0.000
Likelihood ratio	99.990	96	0.000
Linear-by-linear association	83.901	1	0.000
N of valid cases	353		

Source: The authors.

When performing the specific hypothesis test (H_3), with the chi-square test, it is observed that there is an association between the speech therapy program variable and the variable improves phonological awareness, because the calculated chi (83.901) is greater than chi table (3.8415). Also, the hypothesis test is affirmed because the sig.value is 0.000, less than 0.05, therefore, the specific hypothesis (H_3) is accepted: The speech therapy program significantly improves phonological awareness in 5-year-old children from educational institutions in Lima, Peru.

6 CONCLUSIONS

The speech therapy program positively strengthens phonological awareness in 5 year olds in educational institutions, according to this study, conducted in the city of Lima, Peru. The speech therapy program significantly raises the performance of phonological awareness of 5-year-old children from educational institutions, which was demonstrated in this research, done in Lima, Peru. The speech therapy program significantly improves phonological awareness in 5 year olds in educational institutions, as discovered in this study, practiced in Lima, Peru.

REFERENCES

[1] I. López, and G. Valenzuela, “Niños y adolescentes con necesidades educativas especiales”, Revista Médica Clínica Las Condes, vol. 26, no. 1, pp. 45-51, Jan. 2015.

[2] M. Morán, L. Vela, and M. Morán, “Los trastornos del lenguaje y las necesidades educativas especiales. Consideraciones para la atención en la escuela”, Universidad y Sociedad, vol. 9, no. 2, pp. 191-197, Aug. 2017.

[3] P. Pérez, and T. Salmerón, “Desarrollo de la comunicación y del lenguaje: indicadores de preocupación”, Pediatría Atención Primaria, vol. 8, no. 32, pp. 111-125, Oct. 2006.

[4] D. Calderón, “Sociolingüística y educación: el habla en el aula”, Cuadernos de Lingüística Hispánica, vol. 18, no. 2, pp. 11-24, Jul. 2011.

[5] G. Urgilés, “Aula, lenguaje y educación”, Sophia, Colección de Filosofía de la Educación, vol. 20, no. 1, pp. 221-244, Jan. 2016.

[6] A. Cárdenas, “Piaget: lenguaje, conocimiento y educación”, Revista Colombiana de Educación, vol. 60, no. 1, pp. 71-91, Jan. 2011.

[7] L. Miranda, “Lenguaje: Algo más que un mecanismo para la comunicación”, Revista Electrónica Educare, vol. 15, no. 1, pp. 45-51, Jan. 2011.

[8] N. Ibañez, “El lenguaje en el niño, una nueva mirada”, Estudios Pedagógicos, vol. 126, no. 1, pp. 51-67, Jan. 2000.

[9] L. Bravo, “La conciencia fonológica como una zona de desarrollo próximo para el aprendizaje inicial de la lectura”, Estudios Pedagógicos, vol. 28, no. 1, pp. 165-177, Jan. 2002.

[10] D. Gelber, “Trayectorias de riesgo, éxito y abandono en Ciclo Básico en Uruguay”, Páginas de Educación, vol. 3, no. 1, pp. 61-81, Dec. 2015.

[11] J. Móttola, “¿Quién dijo que todo está perdido? Las condicionantes del abandono escolar en zonas urbanas periféricas del Uruguay”, Páginas de Educación, vol. 3, no. 1, pp. 83-103, Dec. 2015.

[12] C. Ormeño, S. Rodríguez, and V. Bustos, “Dificultades que presentan las educadoras de párvulos para desarrollar el pensamiento lógico matemático en los niveles de transición. Difficulties of kindergarten educators to develop logical mathematical thinking at transition levels”, Páginas de Educación, vol. 6, no. 2, pp. 55-71, Jul. 2015.

[13] J. A. Suyo Vega, V. H. Fernández Bedoya, M. E. Meneses la Riva, and S. E. Paredes Díaz, “Perception of corruption from school minds: an investigation conducted in students of school research seedlings”, International

Journal of Scientific & Engineering Research, vol. 10, no. 9, pp. 1745-1748, Sep. 2019.
[14] M. Quiroga, and F. Aravena, "¿Qué tipos de datos recolectan los directores? Consecuencias para la elaboración de planes de mejora", Páginas de Educación, vol. 11, no. 2, pp. 24-39, Jul. 2018.
[15] E. R. Babbie, The Practice of Social Research. Boston, Massachusetts: Cengage Learning, 2014.
[16] B. Dodd, The differential diagnosis and treatment of children with speech disorder. London, England: Whurr Publishers Ltd, 1995.
[17] M. Maggiolo, and M. Pavez, Test para evaluar los procesos fonológicos de simplificación TEPROSIF-R. Santiago de Chile, Chile: Ediciones Escuela de Fonoaudiología, Facultad de Medicina de la Universidad de Chile, 2000.
[18] C. Ackermann, and C. Guerrero, "Análisis de las habilidades metalingüísticas de tipo fonológico en niños/as con trastorno específico del lenguaje que asisten al segundo nivel de transición en escuelas de lenguaje de la comuna de Villa Alemana," bachelor thesis, Instituto Profesional Helen Keller de Ciencias y Educación, Valparaíso, Chile, 2014.