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Use of TEVI-R to describe passive vocabulary in children belonging to a Mapuche community

Uso del TEVI-R para describir el vocabulario pasivo en niños de la etnia Mapuche

Keywords

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ABSTRACT

Purpose: To describe the level of passive vocabulary in boys and girls belonging to the Mapuche ethnic group, using the Vocabulary Test in Images Revised version (TEVI-R). **Methods:** A cross-sectional study was carried out. Twenty-six children, both gender, between 4 to 7 years old participated in the study. The performance of passive vocabulary was measured through the application of the TEVI-R, analyzing the variables age and gender, as well as performing an analysis of the items and the number of errors. **Results:** The performance of these children is not influenced by gender or age. There are potential sources of error in the items of the instruments related to the cultural, geographical relevance and graphic quality of them. **Conclusion:** No association was observed by gender or differences by age in the study population. The possibility of developing new instruments or revising the available ones is discussed, given the characteristics of their native language, obtaining reliable results and respecting the elements that are part of their culture.

RESUMEN

Objetivo: Describir el nivel de vocabulario pasivo en niños y niñas pertenecientes a la etnia mapuche, utilizando el Test de Vocabulario en Imágenes versión Revisada (TEVI-R). **Método:** Se llevó a cabo un estudio de corte transversal. Participaron 26 niños, de ambos géneros cuyas edades fluctuaron entre 4 y 7 años de edad. Se midió el desempeño de vocabulario pasivo mediante la aplicación del TEVI-R, analizando las variables edad y género, además de realizar un análisis de los ítems con mayor cantidad de errores. **Resultados:** El rendimiento de estos niños no se ve influenciado ni por género, ni por edad. Existen potenciales fuentes de error en los ítems de los instrumentos relacionados a la pertinencia cultural, geográfica y a la calidad gráfica de los mismos. **Conclusión:** No se observó asociación por género ni diferencias por edad en la población estudiada. Se discute la posibilidad de elaborar nuevos instrumentos o revisar los disponibles, dadas las características de su lengua materna, con la finalidad de recabar resultados fiables y respetar los elementos que forman parte de los marcadores propios de su cultura.

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INTRODUCTION

Language is possible to be described based on its levels, such as morphology (rules for word formation), lexicon (active and passive vocabulary), syntax (rules for grouping words into grammatically acceptable sequences), pragmatics (rules for appropriate contextual social use), and semantics (conventions to give meanings of words, sentences or clauses)⁽¹⁾.

As mentioned above, the semantic level is the study of the relationships between a sign and all others in a context, allowing the interpretation, knowledge, acquisition, and use of the lexicon. It is strongly linked to the representative function, essential to understanding the evolution of the language acquisition process⁽²⁾.

As children grow up, they develop their language, progressing when they enter the school stage, allowing the consolidation of communicative competence⁽³⁾. Therefore, a wide repertoire of vocabulary is essential since this is part of the skills, along with the recognition of words and grammatical skills, which allow the development of accuracy and reading comprehension. Thus, to evaluate the lexical performance of children in preschool it is relevant as these skills begin to strengthen before entering the school stage⁽⁴⁾. Also, Puyuelo et al.⁽⁵⁾ stated that the level of knowledge of words and concepts is an excellent measure of cognitive-linguistic development and school learning potential, therefore, it is necessary to assess it early.

The importance of acquiring the lexicon, specifically the passive vocabulary, is the gateway to the language received from other individuals. A word progresses from passive to active knowledge. Thus, using a word correctly, it must be previously understood when it is heard or read⁽⁶⁾.

Some factors showing the association with vocabulary development are related to sociocultural and family elements⁽⁶⁻⁷⁾. Also, a possible association between vocabulary and gender has been described in the literature but as diverse and confusing⁽⁸⁾. Hammer et al.⁽⁹⁾ proposed a relation between both, attributing the greater development of vocabulary associated with the differentiated growth between genders. This would be because of the effect in this variable on socialization, that is, it would be due to deferred rules of interaction in both genders.

This is the case of the acquisition of vocabulary in monolingual children, that is a complex process and follows a certain pattern in each evolutionary stage of the individual. However, this development acquires even more complexity by exposing the children to culturally and linguistically diverse contexts, as the parallel acquisition of a second language makes changes in the way both develop and consolidate, when compared to monolingual children⁽¹⁰⁾.

Cases in which two or more cultures interact in a particular environment, the qualities of each culture and their languages will be accustomed and marked by the effect of that interaction⁽¹¹⁾. The process in which an individual acquires a second culture and language is essential not confusing it as a process of replacing the first language⁽¹²⁾. In this context, a multicultural interaction many times implies in the development of bilingualism, consequently generating differences in the acquisition of the second language when compared to those who are monolingual⁽¹⁰⁾.

Some studies in bilingual individuals show that children learn the same number of words, in similar instances of the development of monolingual children^(10,13). The existing lexicon is distributed in coexisting words in both languages and those that are unique between the two languages. The exposure of each language may vary, which undoubtedly influence the number of known words in each of them⁽¹³⁾.

Also, Pearson et al.⁽¹⁴⁾ observed that many individuals use more words in one of the languages, regardless of the exposure they have with that language. Children who form their language in bilingual settings use similar strategies more frequently than monolingual children to increase and organize their lexical system, but the way they get it is presumably different.

This applicability is conditional on the variability of the contexts that bilingualism develops⁽¹⁴⁾. In the case of Chile, which is a multi-ethnic country, there is a group that has had to assimilate these processes: they are the Mapuche people.

According to the 2012 Census, 11.11% of the population declared they belong to an ethnic group, with the Mapuche population leading the group with the largest number of people (84.11%)⁽¹⁵⁾. Within the regions of Chile, Araucanía is the region with the largest amount of Mapuche population (31.58%), whose culture has been characterized as being oral, transmitted from generation to generation through its language called the Mapuzugun⁽¹⁶⁾.

The importance of the language in this ethnic group, and the large population living in the region belonging to this ethnic group highlight the importance of investigating these formal aspects and their use among their participants.

Currently, there are few studies on bilingualism and semantics in Mapudungun⁽¹⁷⁾. The investigations have focused on lexicalization, understood as the differentiation of meanings through particular terms and based on cultural characteristics of its speakers⁽¹⁸⁾. In the case of Mapudungun, lexicalization has been decreasing, which is partly explained by the constant cultural and political discrimination that affects the Mapuche people, associated with the imposition of the Spanish language, which has implied a decrease in lexical development and the simplification of the language when compared with Spanish. From another perspective, the Mapuche language has been attached to its cultural characteristics and has not been aligned with the linguistic development of the contemporary world. Mapudungun is characterized by containing a richness appreciated in its refined levels of abstraction and depth within its cultural traditions, allowing to express terms or aspects of life that are not possible in other languages⁽¹⁹⁾.

From a speech-language point of view, in multicultural contexts and considering the aforementioned, it is of main relevance within the evaluation process, to establish if a user performs within the limits of their age or if there is a performance trend towards the pathological, considering the user's cultural and linguistic context⁽²⁰⁾.

The evaluation of children's language is the process to detect those linguistic behaviors that are altered and determine their level. In this act, in which information is collected and analyzed, allows assessing specific problems, and then plan the educational needs required according to each case⁽⁵⁾.

There is no doubt and considering the above that the evaluation process that a culturally and linguistically diverse individual

should be exposed (understood as the people whose dominant language does not match the broader social environment they are immersed, this includes bilingualism) is linked to a social context. Therefore, it must necessarily include tools that allow the evaluation of these populations⁽²¹⁾.

These processes are often influenced by difficulties associated with the instruments frequently used for the assessment of children on their cultural relevance. In the case of these users, these tests generally do not have criteria or norm-references. Consequently, since they are not representative of children belonging to this ethnic group, their results in quantitative terms should not be conclusive but should be used only descriptively⁽²⁰⁾. Therefore, communication professionals must meet the academic demands of the population in which they are inserted, considering cultural variables that may have an impact on language development and its evaluation, propitiating the axes of a future intervention⁽²²⁾.

The way of assessing language varied, depending on the need, characteristics, age, and condition of each person. Using standardized tests is a way of carrying out such an evaluation.

The Revised Image Vocabulary Test (TEVI - R) is a useful standardized test for the Chilean population to analyze the level of passive vocabulary comprehension of a Spanish-speaking individual between two and a half and seventeen years old⁽²³⁾. In this context, the participants of the standardization process belonged exclusively to the Bío Bío Region, from educational establishments in Concepción, Talcahuano, and Chiguayante⁽²³⁾. In this way, its sample size is not necessarily representative of the population and cultural diversity of the country since its norms do not include scores for children of the Mapuche ethnic group.

The objective of this study was to describe the performance in the passive vocabulary that children of the Mapuche ethnic group have through the TEVI-R, after a previous screening of their language.

METHODS

A non-experimental, descriptive and cross-sectional study was carried out. The sample had the students belonging to Truf Truf school in the commune of *Padre Las Casas* in 2016, which is inserted in a Mapuche community.

The eligibility criteria are the following

The inclusion criteria were: (1) students with regular attendance at the educational center, confirmed through the enrollment certificate in parallel to the general attendance in the class book; (2) Mapuche ethnic students who presented legitimate certificates of the National Corporation for Indigenous Development (CONADI); and (3) students who presented auditory indemnity and external auditory canal indemnity, evaluated through otoacoustic emissions, otoscopes and acoumetries before the language assessment. The exclusion criteria were: (1) students who had shown intellectual deficit through existing documentation in the School Integration Program; (2) students who had borderline intellectual functioning, accredited by documentation in the School Integration Program; (3) students who had expressive or mixed language disorder, shown by documentation in the School Integration Program (if any), and language assessment based on standardized tests in Chile; and

(4) students who had moderate or severe diagnosed hearing loss with supporting documentation.

The sampling was done for convenience, with 28 students from the population corresponding to the range of 4 to 7 years old. Two participants were excluded for presenting language disorder, according to the criteria described previously, leaving the final sample of 26 students. Fourteen 14 of them were female (53.8%) and 12 of them were male (46, 2%) between 4 and 7 years old (average of 5.21 years old).

The study was approved by the Ethics Committee, Resolution 97/2016. Both the study and the application of the instrument were carried out in accordance with the ethical regulations set forth in the Helsinki declaration for research with human beings⁽²⁴⁾. Information about study objectives, procedures, risks, and benefits was given to tutors and study participants, which formalized their inclusion by signing an informed consent form.

Before investigating the students' language, their auditory level was assessed, performing otoscopies and subsequently the otoacoustic emission test (EOA).

The language assessment was carried out by applying standardized and normed tests in Chile⁽²⁵⁾. In this way, the presence of Specific Disorder of the Mixed or Expressive Language was ruled out.

First, a Repeat Articulation Test (TAR) was applied, followed by the Test to Evaluate Revised Phonological Simplification Processes (TEPROSIF-R). Then, the Test for the Listening Comprehension of the Language of E. Carrow (TECAL), the Exploratory Test of the Spanish grammar of A. Toronto (STSG) was used and finally the passive vocabulary was evaluated through the TEVI-R. The instruments were applied in a room free of distractions and intended only for this evaluation.

Descriptive and inferential statistics (χ^2 test) were used for the processing and analysis of the data. A significance value of $p < 0.05$ was considered.

RESULTS

Table 1 shows the comparison of the general performance of passive vocabulary in children of the Mapuche ethnic group, according to their gender. According to the analysis of the table, no association was observed between the gender of the Mapuche ethnic group and the general performance of passive vocabulary ($p = 0.98$).

Table 2 compares the general performance of passive vocabulary in children of the Mapuche ethnic group of Truf Truf, according to their age group. No association was found between the general performance of passive vocabulary in children and age ($p = 0.07$). For the purposes of the analysis, the "outstanding" and "very good" performance classifications were regrouped since, in clinical terms, they correspond to a normal situation. Slight delay was kept in the same label.

Table 3 shows the result achieved by Mapuche students by age through the TEVI-R. No differences were observed between the performance categories with the different age ranges ($p = 0.069$).

In addition, an in-depth analysis was performed with the items answered incorrectly more frequently, presented in Table 4.

Table 1. General performance of passive vocabulary, according to the student's gender

	Very good	Normal	Slight Delay	Severe Delay	Total
Male	5	3	2	2	12
	50.0%	42.9%	40.0%	50.0%	46.2%
Female	5	4	3	2	14
	50.0%	57.1%	60.0%	50.0%	53.8%
Total	10	7	5	4	26
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2. Description of the performance category, according to age

	Very good	Normal	Slight delay	Severe delay	Total
4-5	3	1	3	0	7
	30.0%	14.3%	60.0%	0.0%	26.9%
5-6	4	6	1	1	12
	40.0%	85.7%	20.0%	25.0%	46.2%
6-7	3	0	0	2	5
	30.0%	0.0%	0.0%	50.0%	19.2%
7-9	0	0	1	1	2
	0.0%	0.0%	20.0%	25.0%	7.7%
Total	10	7	5	4	26
	100.0%	100.0%	100.0%	100.0%	100.0%

Table 3. General performance of passive vocabulary, according to the age group of the students

	Normal	Delay	Total
4-5	4	3	7
	23.5%	33.3%	26.9%
5-6	10	2	12
	58.8%	22.2%	46.2%
6-7	3	2	5
	17.6%	22.2%	19.2%
7-9	0	2	2
	0.0%	22.2%	7.7%
Total	17	9	26
	100.0%	100.0%	100.0%

Table 4. Descriptive analysis of items answered incorrectly more frequently

Question	N	Item	Answer(s)	n(%)
20	13	boat	ship	13(100.0)
26	10	To drag	To take	6(60.0)
			To wash	3(30.0)
			To lift	1(10.0)
27	9	Ox	Calf	6(66.7)
			Crab	3(33.3)
32	16	Patent	Suitcases	8(50.0)
			Plate	6(37.5)
			Pan	2(12.5)
35	11	Aircraft	Sailboats	5(45.4)
			Tracks	3(27.3)
			Canoe	3(27.3)
36	18	Dagger	Microscope	8(42.1)
			Hook	7(36.8)
			Scale	3(21.1)

Table 4. Continued...

Question	N	Item	Answer(s)	n(%)
40	11	Jet	Wave	6(54.5)
			Canal	3(27.3)
			Fishbowl	2(18.2)
41	12	Blanket	Shawl	6(50.0)
			Rug	5(41.7)
			Jacket	1(8.3)
50	14	Belt	Skirt	7(50.0)
			Buckle	4(28.6)
			Beret	3(21.4)
51	13	Rail	Rowing	7(53.8)
			Sailboat	3(23.1)
			Ship	3(23.1)
54	11	Bunch	Instep	9(81.8)
55	13	Chiromancy	Cluster	2(18.2)
			Guard	8(61.5)
			Detective	4(30.8)
56	12	To suicide	Priest	1(7.7)
			To hypnotize	7(58.3)
			To ski	3(25.0)
			To walk	2(16.7)

DISCUSSION

No differences were observed between children's performance according to gender. This is consistent with different studies at the international level, addressing the confusion regarding this association⁽⁸⁾. However, since there is no clarity about this possible association, the hypothesis that links this variable to the social, cultural, family and even educational factors interaction that explain the performances is proposed⁽⁷⁾.

Regarding the age variable, it is concluded that there is no relationship between it and the level of passive vocabulary in children of the Mapuche community, similar with the study conducted by Benítez⁽²⁶⁾ since it cannot establish the existence of an improvement in the level of recognition of the lexical form and its corresponding graphic representation according to the increase in the age of the individuals.

Although the general performance of these children is considered adequate, it is important to deepen the analysis of the incorrect answers obtained from the application of the evaluation instrument. Seven of 13 items described (53.9% of the total) do not have a representation in the Mapuche language (items 20, 32, 35, 36, 40, 51 and 56)⁽²⁷⁾. It is hypothesized that the individuals of the study population who answer incorrectly to them do not manage to find their correct meaning⁽¹³⁾. This lack of representation would also be explained because the Mapuche language keeps its own cultural features, and its development (lexicalization) is not similar to the development of Spanish⁽¹⁹⁾. In this context, words such as palmistry, suicide or rail, do not exist as such in the Mapudungun, so they can be potential sources of error.

Also, the perception of images will depend largely on previous experiences and would prove to be a perceptual ability

restricted to the geo-cultural factor or context⁽²⁸⁾. This is relevant considering that the test used (TEVI-R) requires that children recognize visual stimuli requested by the evaluator, which are often not conditioned by these status. Some examples are words such as blanket, dagger, girdle or aircraft.

It is also important to hypothesize that some of the errors in this group of children may be due to difficulties in the recognition of images by their graphic quality, that is, the stimuli may be unclear for children evaluated from the features that must be distinguished among them. Some examples are words such as boat, drag, aircraft, blanket or ox. This difficulty was also reported in Benítez's study⁽²⁶⁾, which can be assumed as a potential bias.

In the context or process of application of the instrument, the study by Pearce et al.⁽²⁹⁾, that applied a standardized test to indigenous Australian children, mentioned the existence of uncertainty regarding the results of the professionals who carried out the evaluation. This is due to the convergence in the linguistic characteristics of preschoolers given their linguistic-cultural conditions, which can cause discrepancy when determining the existence of a disorder, with the possibility of making an infra or supra diagnosis. This situation can be seen replicated when administering the TEVI-R to evaluate the children in the sample, considering as a possible factor in those cases in which the yields were lower than expected.

The applied version of the TEVI-R is the most current in reviews (2000-2001). The participants belonged exclusively to the Bío Bío region from establishments in Concepción, Talcahuano, and Chiguayante⁽²³⁾, so the sample size is reduced to a school setting that does not represent the existing socio-cultural variety at the national level.

Within the limitations of this study is that given the small sample size due to the feasibility of the study, the results obtained

may not be transferable in the context of the Mapuche ethnic group. In this sense, it is necessary to obtain a broader view of the individual, considering studies with larger sample sizes to corroborate, or not, the measuring capacity of the instrument.

An important element to mention is the fact that in the Mapuzungun, an isolated word is never understood, but it is possible to understand it by being part of a structure with other words, attracted one by one to create a statement with more complex or abstract meaning, than in Spanish⁽¹⁹⁾. For example, the item dialogue, in Mapudungun can be conceptualized as “nutramka” (conversation), but also, this same concept has another lexical representation in “koyagtu”, which corresponds to the discourse dialogue between two people of different family lineages, within a funerary context⁽²⁷⁾. Consequently, this could influence the results obtained, since the TEVI-R evaluates isolate concepts.

Another limitation of this study was the ability to recognize images by the participants since the cultural environment of the communities they belong does not use plates in the learning of stories or acquisition of the speech, since the teaching of Mapuzugun is transmitted through oral production. It is important to consider in future studies whether or not previous exposure can influence the perception of illustrations⁽³⁰⁾.

Finally, the fact of including the study population based on the application of standardized instruments for the general population of the country constitutes bias when it is not certain whether they manage to capture much of the characteristics of this population. Although there was the complementary support of the teachers, the latent need to adjust the evaluation processes according to the cultural relevance of the Mapuche people was highlighted.

CONCLUSION

As the objective of this study, it is concluded that there was no association by gender or age differences related to the performance in passive vocabulary in the population studied. Regarding the application of the instrument in this investigation, although the participants in general performed within the expected ranges for their chronological age, the analysis of performance errors showed that they are possibly associated with features of the Mapudungun, to the geographical and cultural context in which they are found, related to the relevance of the stimuli or difficulties of the visual quality of the items. Although the limited sample size probably did not fully represent the reality of children belonging to this ethnic group, the importance of the research and projection of future studies allow representing their cultural diversity, with larger sample sizes, obtaining more valid and reliable results, which allow reaffirming the diagnostic capacity of the instrument or enable its review, modification or the creation of new ones, with the objective of being able to identify or capture more accurately the situation of children of the Mapuche ethnic group, with the subsequent ethical benefit of an intervention appropriate to linguistic and cultural needs.

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Author contributions

LFU This is the lead author, who participated in the conception and development of the research idea, the interpretation of the study data, the review and the critical analysis of the intellectual content. He has the final version approval to be published. There was an agreement to consider all the aspects of the work to ensure that questions related to the accuracy or completeness of any part of the study were properly investigated and resolved; CM This author participated in the conception and development of the research idea, interpretation of study data, review and the critical analysis of intellectual content. He has the final version approval to be published. There was an agreement to consider all the aspects of the work to ensure that questions related to the accuracy or completeness of any part of the study were properly investigated and resolved; CO This author participated in the conception and development of the research idea, the interpretation of the study data, the review and the critical analysis of intellectual content. He has the final version approval to be published. There was an agreement to consider all the aspects of the work to ensure that questions related to the accuracy or completeness of any part of the study were properly investigated and resolved; JQ This author participated in the conception and development of the research idea, the interpretation of the study data, the review and the critical analysis of intellectual content. He has the final version approval to be published. There was an agreement to consider all the aspects of the work to ensure that questions related to the accuracy or completeness of any part of the study were properly investigated and resolved; KV This author participated in the conception and development of the research idea, the interpretation of the study data, the review and the critical analysis of intellectual content. He has the final version approval to be published. There was an agreement to consider all the aspects of the work to ensure that questions related to the accuracy or completeness of any part of the study were properly investigated and resolved; CM This is the coordinator. He participated in the conception and development of the research idea, the interpretation of the study data, the review and the critical analysis of intellectual content. He has the final version approval to be published. There was an agreement to consider all the aspects of the work to ensure that questions related to the accuracy or completeness of any part of the study were properly investigated and resolved.