Educational Administration: Theory and Practice
2024,30(6), 4051-4056
ISSN:2148-2403
https://kuey.net/

Research Article

Methodological program of reading comprehension in the linguistic intelligence of university students

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Citation: Ulises Espinoza Apolinario, et al. (2024), Methodological program of reading comprehension in the linguistic intelligence of university students . *Educational Administration: Theory and Practice*, *30*(6), 4051-4056
Doi: 10.53555/kuey.v30i6.2573

ARTICLE INFO

ABSTRACT

The research was carried out with the objective of determining the effects of the methodological program based on reading comprehension for the development of linguistic intelligence in university students. Regarding the methodology, the study corresponds to the quantitative approach, explanatory type with a univariate quasi-experimental design with two groups: experimental and control. From this research carried out on a sample of 172 students from the Daniel Alcides Carrión National University in 2022, the result was that, after the application of the methodological program, significant differences were shown between the grades of the control group and the experimental group, where the significance value of the Wilcoxon rank test = 0.00 was less than 0.05. In this way, it was concluded that the experimental program had a significant effect on the development of linguistic intelligence.

Keywords: Methodological program, reading comprehension, linguistic intelligence.

INTRODUCTION

Within university training, one of the training aspects is related to the development of generic skills. One of these general skills that all university students must possess is related to the ability to communicate their ideas effectively, that is, the development of linguistic intelligence. In this regard, Gardner (2001) points out that this intelligence is conceived as the ability to use words effectively, appealing to the semantic, syntactic and pragmatic domain of language. However, in the reality of many universities, a prolonged emphasis on specialized or specific training for many decades has contributed little to the development of generic competencies of their students. Hence, the development of verbal or linguistic intelligence was generally related only to students in careers related to literature or the humanities. In Peru, since the promulgation of University Law 30220, in July 2014, with the mandatory nature of general courses in the curriculum, this reality begins to change, affecting general training. Currently, university entities are betting on the development of skills that allow their students to be aware of the quality and importance of their communications, to be reflective about environmental awareness, to be interested in their logical thinking, to value the interrelationships with others and other domains that will contribute to being not only professionals, but better people.

Verbal or linguistic intelligence is conceived as the ability that we all have to efficiently use oral and written language, based on syntactic, phonological, semantic and pragmatic management. It also implies its reflective use through metalanguage and even rhetorical resources (Gardner, 1995). For Antunes (2002), linguistic or verbal intelligence represents an essential instrument for the survival of modern human beings to work, travel, have fun or relate to others; Language constitutes the most important and sometimes the only element of communication. This assertion places this intelligence in a prominent place in our own daily lives, since the development of language is so necessary for the development of any human activity. In accordance with

Gardner (1995), linguistic intelligence has key components such as the ability to possess auditory perception of sounds, the ability to structure meanings, and determine the functional aspects of words and language (Armstrong, 2006).
Linguistic intelligence is part of the set of skills proposed by Gardner, whom I have called multiple intelligences. These capacities can be enhanced progressively, because although we are all already born with an intellectual genetic mark, this will develop through the social interaction experienced in your family, in school education, in your environment of friends, among others (Ministerio de Educacion, 2007). In this sense, verbal intelligence, like other intelligences, can be developed from these factors: an inevitable biological endowment, an impact of cultural background and the influence of your life history. The success of the development of any of the intelligences will be denoted by the individual's ability to interact with these three aspects.

The general characteristics of linguistic intelligence are related to the management and effective use of oral or written language, as well as the ability to optimally use the semantic, phonetic, syntactic and pragmatic aspects of language; Another of its features involves the quality of discursive expression in diverse communicative situations (conversations, presentations, comprehensive reading or active listening). On the other hand, the specific characteristics of verbal intelligence are shown when individuals have the ability to coherently express their ideas orally, when they can write their ideas meaningfully and coherently, also by knowing how to listen to others and when they can understand various texts, synthesizing and arguing the ideas of the text. (Ministerio de Educacion, 2007)

For the development of multiple intelligences, the role played by teachers is important. The focus of pedagogical activities in classes must change centrality, where students should be the protagonists, to whom teachers must assign more responsibility and commitment in their learning, instilling inspiration, encouragement and motivation so that they can trust themselves more (García et al., 2016). Therefore, when there is a commitment to develop linguistic intelligence, it must be stimulated from the initial periods of life, where responsibility should be assumed by teachers and parents, who are the main drivers of these children's learning scenarios. About, Antunes (2002) points out that the stimulation of verbal intelligence is noticeable in environments that use words and are related to multiple conversations, in addition; A child who grows up in a very quiet house will probably have much more evident verbal expression limitations than other children. In light of these ideas, it is necessary to reflect on the importance of generating positive stimuli at home as well as at school; therefore, it is useful to construct scenarios where the child can get involved and experience real communicative situations.

Linguistic intelligence can be stimulated from intellectual training through various strategies and activities. About, Antunes (2002) proposes to categorize the stimuli necessary to develop this intelligence according to these phases:

- In early childhood education: Contests can be used to increase mastery of vocabulary and knowledge of new terms. You can also generate spontaneous conversations, collecting their points of view and thematic contributions. It is suggested to generate stimuli for singing and access to interactive experiential narratives.
- In primary education: Influence the description of various images with varied communicative intentions. Make short oral narratives about everyday situations in your environment. Propose linguistic games and storytelling contests. Collectively analyze the content of songs and poems.
- In secondary education: Take guided tours of the dictionary to practice its use. Open debates regarding controversial issues. Hold forums and integrated discussion panels. Verbalize the understanding of citizenship.
- In higher education: Reflect from case analysis. Use interdisciplinarity to interpret situations.

Reading is a process that is closely linked to the development of linguistic intelligence, which is why it is important that the university ensures its students learn. According to Cassany (2004), learning to read involves the development of cognitive skills, but it is also related to the acquisition of particular sociocultural knowledge, where the author and reader adapt their contexts to a concrete reality, to a specific type of text, to a way of thinking, to a tradition and to other interests. From this perspective, reading is an intellectual activity that must be part of any educational process, with greater relevance at the university level. Since, a student who reads will have better tools to develop his or her linguistic intelligence. Therefore, it makes sense that universities are increasingly interested in promoting reading among their students, despite the fact that the reading habit deficit is present in many university institutions.
Given the relevance of reading in university education, it is necessary to deepen the analysis of the theoretical foundations. In this line of analysis, to Cassany (2006), reading is synonymous with understanding. Since, to understand a text it is necessary to develop our cognitive skills such as, for example, knowing how to anticipate the ideas of the text in advance, activate prior knowledge regarding the topic of the text, make hypotheses and then verify them, generate inferences from literal ideas, construct meanings, among other more complex mental processes. Reading has three conceptions that interact in the reading process, a linguistic conception

to recover the semantic value of words, another psycholinguistic to develop skills to make predictions and inferences that contribute to improving understanding. A third conception is related to the sociocultural conception, where reading is conceived as a practice linked to culture, in which it is important to understand its history, traditions, habits, moral practices and other forms of social expression.

For Sánchez (2012), reading comprehension is a process that is energized by the reader's active participation in the assimilation and interpretation of the ideas that the author makes available in the text. This process implies that the reader assumes a participatory role during reading, where he or she may be predisposed to assimilate and interact with the author's ideas. In addition; Guerra y Forero (2015), indicates that comprehensive reading is a process: interactive, because the text is complemented by the reader's prior knowledge, which allows meaning to be constructed; strategic, because it varies according to the objective, the nature of the material and the purpose of the reader; and metacognitive, because it controls one's own thought processes, thus ensuring understanding. In this sense, reading to be comprehensive must necessarily be a constructive process, where the reader, through interaction with the author's ideas, constructs meanings. or which one makes it possible to construct meanings. On the other hand, it must be strategic, because when reading, the reader uses certain strategies that will depend on his or her particular way of reading, the objective he or she pursues, and even the typology of the text. Metacognition intervenes in comprehensive reading because, when reading, the reader is aware of his own comprehension process, he realizes if his strategies for understanding are working or require reorientation. Hence, comprehensive reading is active, since the reader from the beginning establishes a dynamic process with the text, formulating hypotheses, making predictions about its content, and when reading can even generate questions about its content.

Solé (1998), regarding reading comprehension, conceives comprehension as a process of interaction between the reader and the text, it is the process through which the former tries to satisfy the objectives that guide their reading. Reading is synonymous with understanding (Cassany, 2006), To understand it is necessary to develop several mental skills or cognitive processes: anticipate what a piece of writing will say, provide our prior knowledge, make hypotheses and verify them, make inferences to understand what is only suggested, construct a meaning, etc. Reading, then, cannot be conceived as a process far from understanding. Therefore, when we talk about reading comprehension we necessarily associate both terms in its definition.

To understand a text there are three levels: literal, inferential and critical understanding. Literal comprehension is conceived as comprehension focused on the text itself, it implies the ability to understand the ideas said directly in the text and the ability to remember them effectively. As for the inferential level, it refers to the mastery that the reader has to establish various relationships between the ideas of the text, on information that is not expressly stated in the text, but that can be understood from the inferences. In this case, to reach the inferential level, it is crucial that the reader has ensured literal understanding of the ideas in the text. Likewise, it is useful to develop this level to influence metacognition, since this reflective process about your reading will help to better guide the understanding of inferential ideas. For its part, the level of critical understanding requires the reader to be able to make evaluative judgments about the text read, based on their own personal positions and points of view. At this level, the reader can interpret the author's purposes and contrast them with his own judgments, sometimes agreeing with his arguments or other times questioning them (Pinzás, 2008).

The practice of reading as a cognitive activity has been changing with the appearance of technological development associated with the Internet. In this new digital age, reading online requires a new way for the reader to interact with a virtual text. According to Cantero (2023), states that digital native students feel comfortable with hypertextual and multimodal documents and have accounts on social networks to exchange information and communicate; They practice multitasking. Although online reading is an increasingly common practice, especially among university students, the teaching strategies are the same. In this case, readers, whether conventional or digital, before reading will activate their prior knowledge and make predictions about its content. During the reading process, among other strategies, they will verify their previous hypotheses and use resources to highlight the main ideas of the text. After reading, they will also be able to make summaries and make evaluative judgments about the text.

Taking into account the panorama of the difficulties that university students have in developing their linguistic intelligence and how this can affect their professional training, the study aimed to establish the effects of the methodological program based on reading comprehension to develop their linguistic intelligence. The intervention program was made up of five academic workshops, where thematic axes related to the identification of the main ideas of the text, the determination of reading purposes, formulation of predictions and hypotheses were addressed. Likewise, textual typology, inferences and semantic meaning of words and, finally, critical reading were included as an agenda. In the workshops, a set of pedagogical activities focused on reading were developed, in order to contribute to the development of the students' semantic, syntactic and pragmatic mastery.

METHOD

The study was carried out using a quasi-experimental design with two groups, one control (CG) and the other experimental (EG) with pre and post test. In accordance with Hernández et al. (2010) quasi-experimental designs deliberately manipulate at least one independent variable to observe its effect on one or more

dependent variables. In this case, the independent variable was the methodological program based on reading comprehension and the dependent variable was the development of linguistic intelligence. A pre-test questionnaire was applied as an instrument to both groups (control group and experimental group) to determine the level of linguistic intelligence. Then, the intervention of the methodological program based on reading comprehension was carried out only in the experimental group and subsequently the linguistic intelligence questionnaire (post test) was applied again to both groups.

The population was made up of 928 students from the Daniel Alcides Carrión National University belonging to the first cycle, enrolled in the 2022-A semester. The sample was non-probabilistic, consisting of 172 students from five study programs (Obstetrics, Communication and Literature, Economics, Communication Sciences and Environmental Engineering), belonging to the subject of Oral and Written Communication of the first semester.

The questionnaire that evaluates the level of linguistic intelligence is an instrument that consists of 20 items, of which 7 questions are aimed at measuring the syntactic domain, 6 are related to the syntactic domain and 7 to the pragmatic domain. The validity of this instrument was determined by expert judgment and the reliability coefficient through the Kuder-Richardson formula with a value of 0.82. Data analysis was carried out using non-parametric statistics, using univariate descriptive analysis, with the presentation of measures of central tendency and variability (mean, median, standard deviation, variance). The results of the pre- and post-test tests were derived from the inferential statistical analysis, where the response to the objectives of the study was taken into account, according to the variables and dimensions of the research. The hypothesis testing was carried out through the Wilcoxon rank test.

RESULTS

Table 1. Level of development of linguistic intelligence of the Experimental Group

Variable	Development level	Pre test		Post test	
		f	%	f	%
Linguistic intelligence	Low	61	70.93	27	31.40
	Half	23	26.74	45	52.33
	High	2	2.33	14	16.27
	Total	86	100.0	86	100.0

The results for the experimental group (EG) in the pre-test show that the majority of students have a level of linguistic intelligence at the low level (70.93%), this percentage decreases considerably in the post-test to 31. .40% at the same level. Regarding the intermediate level of linguistic intelligence, in the pre-test we found 26.74% of students, while for the post-test this index increases to 52.33%. On the other hand, in the high level pre-test there are only 2 students and this number increases after the post-test to 14 students who now belong to this level. The data shown allow us to conclude that the effectiveness of the methodological program based on reading comprehension to develop linguistic intelligence is evident.

Table 2. Level of development of linguistic intelligence of the Control Group

Variable	Development level	Pre test		Post test	
		f	%	f	%
Linguistic intelligence	Low	77	89.53	64	74.42
	Half	9	10.47	22	25.58
	High	0	0	0	0
	Total	86	100.0	86	100.0

For the control group (CG), the linguistic intelligence of the students is between low and medium levels. In the pre-test, 89.53% have a low level, although in the post-test this index is slightly reduced to 74.42%. For the pre-test of the medium level we find it at 10.47%, while in the post-test it increases to 25.58%. However, despite slight improvements being found at the intermediate level and little decline at the low level, there are no students who have a high level of linguistic intelligence, unlike the experimental group.

Table 3. Comparative statistics of the Experimental Group and Control Group

		Experimental group		Control group	
		Pre test	Post test	Pre test	Post test
N	Valid	86	86	86	86
	Lost	0	0	0	0
Half		8.92	11.42	7.93	8.40
Median		9.00	11.00	7.00	8.50
Standard deviation		2.479	2.843	2.162	2.203
Minimum		5	5	2	4
Maximum		16	18	12	14

The comparative statistics in Table 3 show that the mean for the experimental group in the pre-test was 8.92 on a vigesimal scale, while in the post-test it increased to 11.42, showing an increase of 2.5 points. What would explain this advance is the effectiveness of the methodological program based on reading comprehension to develop linguistic intelligence. While, in the control group the mean of the pre-test was 7.93 on a vigesimal scale and in the post-test it was 8.40. In comparison with the advances evidenced for the experimental group, in this control group there is only an increase of 0.47 points.

Hypothesis testing:

H1: The application of the methodological program based on reading comprehension significantly influences the development of linguistic intelligence of university students.
Ho: The application of the methodological program based on reading comprehension does not significantly influence the development of linguistic intelligence of university students.
To test the hypothesis, a normality test was previously carried out, resulting in non-parametric results, so it was decided to use the Wilconxon rank test. The level of theoretical significance was α= 0.05, which is equivalent to a reliability level of 95%. The decision rule
Sig. ≥ α = null hypothesis Ho is accepted
Sig. < α = alternative hypothesis H1 is accepted

Table 4. Wilconxon rank test

		N	Average range	Average range
Post test - Pre test	Negative ranges	1[a]	9.50	9.50
	Positive ranges	101b	51.92	5243.50
	Ties	70c		
	Total	172		

Note: a. Pots test < Pre test b. Post test > Pre test c. Post test = Pre test

Test statistics[a]	
	Post test - Pre test
Z	-8.770[b]
Asymptotic sig. (bilateral)	.000

Note: a. Wilcoxon signed rank test b. It is based on negative ranges.

Table 4 shows a significance of 0.000, which, being less than 0.05, proceeds to accept the alternative hypothesis and reject the null hypothesis. Concluding that the application of the methodological program based on reading comprehension significantly influences the development of linguistic intelligence in university students.

DISCUSSION

Based on the results, it is possible to affirm that the methodological program favors the development of linguistic intelligence in its semantic, syntactic and pragmatic domains. Although the results of the post-test of the experimental group show considerable increases in the medium and high level, the arithmetic mean for

this group is 11.42 on a vigesimal scale, which constitutes a still low grade in the evaluation system. These results coincide with the research carried out by Olivares (2018), who, using the association test (Chi-square x2 = 80.014), showed that the p value was lower than the assumed level of significance (p = .05), affirming the association between linguistic intelligence and achievements in reading comprehension in its dimensions. literal, inferential and critical. Likewise, similarity was identified with the study carried out by Gusqui y Tixi (2016), who in their degree thesis concluded that the development of linguistic intelligence is favored by the application of methodological strategies for reading comprehension. Although the study sample was fourth-year children, its results coincide with the data obtained in the present investigation.

CONCLUSIONS

The methodological program based on reading comprehension significantly influences the development of linguistic intelligence, which is corroborated with the Wilcoxon rank test, which presents a significance value = 0.00, which is less than 0.05.

From the perspective of descriptive analysis, for the experimental group, a notable growth is shown in the development of linguistic intelligence between the pre-test and post-test, at the medium level the increase corresponds to 25.5% and at the high level it is 13.9%. %. These indices confirm the effectiveness of the intervention program.

Regarding the development of the levels of linguistic intelligence of the experimental group, according to their domains, it is evident that it is the syntactic domain that has developed the most from the application of the intervention program. The percentage of growth between the pre-test and post-test at the average level is 30%. Regarding the pragmatic domain, the percentage progress is 19.77% for the same level. While, the development of the semantic domain for the intermediate level is 15%.

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