# VERBAL COMPREHENSION OF UNIVERSITY STUDENTS

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## Abstract

This paper presents the preliminary results of a broader research on performance and self-perception in reading and writing of university students. In particular, it focuses on verbal comprehension given its connection with reading comprehension. Reading comprehension is crucial, especially while constructing a *situational model*—achieved by integrating the information provided in the text with relevant prior knowledge. A random pilot sample of 60 students from third year, male and female, of an average age of 23 was selected. The Vocabulary, Information and Analogies tests from WAIS III were administered. The Verbal Comprehension findings show central tendency scores similar to those of the standardization sample with minor dispersion, with specific cases of scores in the lower average limit. Several comments are given on the performance of university students and other observations regarding the type of mistakes made in the answers provided which deserve further considerations. Preliminary conclusions point to a lack of and/or insufficient information, conceptual confusion with some terms of relatively high frequency and difficulties in the conceptualization process. These preliminary findings deserve further attention due to their impact in successful learning from texts.

**Key words:** verbal comprehension – reading - university students.

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In this paper we analyze the performance in verbal comprehension of university students attending Psychology. It belongs to a wider research on self-perception and performance in reading and writing of that population (Piacente & Tittarelli, 2010).

The critical performances observed in prior researches (Diamond & Gutlohn, 2007; Piacente & Tittarelli, 2009), lead to examine the oral performance of the students at the chosen educational level. One of the aims of this paper is to analyze the actual performance when specific instruments of verbal comprehension are applied. The Verbal Comprehension Rate of the Wechsler Scales (Wechsler, 2002), including the Vocabulary, Information and Analogies tests, was selected so as to obtain relevant information regarding three significant manifestations of verbal comprehension, namely: the lexical range, previous knowledge and the concepts formation.

The results from the pilot study of such evaluation enable us to arrive at some preliminary reflection on the issue and, in consequence, the proper adjustment of the instruments and/or procedures used.

**Theoretical Framework and Background**

In relation to the competences that must be achieved in any successful learning process, the most conspicuous reading comprehension models (Kintsch, 1998; Kintsch & Rawson, 2005) point out the importance of vocabulary and of prior knowledge when interacting with the written text.

According to the Gough y Tunmer (1986) model, verbal comprehension plays a determining role in reading comprehension as we move forward along the learning path. Indeed, this model describes modifications in such relations whether we are dealing with the early school years or subsequent ones. As already known, the model states that the

reading comprehension must be understood as the multiplication of the decoding skills by those of the oral comprehension. But the authors modulate their statements in terms of the relative greater weight of one or another variable according to the correlations found in their work:

a) In the early school years: $r$ Reading comprehension x Decoding = 0.61 and $r$ reading comprehension x oral comprehension = 0.39.

b) In later years and as we move along the school years: $r$ reading comprehension x Decoding = 0.39 and $r$ oral comprehension x reading comprehension = 0.61

Also, in the Kintsch model (Kintsch, 1998; Kintsch & Rawson 2005), textual comprehension is often defined as consisting of different levels (Kintsch, 1998) of reading comprehension. At the first, there is a linguistic level or processing of particular words or phrases in the text. The reader must decode the graphic symbols on the page. The perceptual processes are involved as well as the recognition of words and the syntactic analysis (parsing) (i.e., assigning to the words the roles they fulfill in phrases and sentences)

The second level, known as basal text, entails more than merely knowing the meaning of words or their combinations in order to form propositions into an interrelation called microstructure. A text as a whole also has specific semantic relations, organized in units of a higher level, called *macrostructure.*

Finally, the third level, corresponds to the construction of a *situation model*, that is to say, it refers to the mental representation of the situation described in the text. Generally, this model construction requires the integration of the information provided in the text with relevant prior knowledge and the purposes of the reader. Indeed, such integration is an

interconnected net of contents and information. There are two categories of significant connections: the referential relations and the logical-causal relations. Both involve a general and extensive linguistic knowledge which require the coordination of several aspects of information (Kucan & Sullivan Palincsar, 2011).

**The Vocabulary Knowledge.** It is the knowledge of words and their meaning. Steven Stahl (1998) points out that knowing a word not only involves a definition, but also knowing how that word fits into the world. In terms of the written language, the vocabulary plays a significant role in the initial reading and writing learning as much as in the later textual comprehension and production. As a matter of fact, readers do not understand a text nor can they write properly when they are not familiarized with the meaning of words. In this way, among the benefits of having a wide range of vocabulary, none is more important than its contribution to reading comprehension. The experts in vocabulary studies agree that an adequate reading comprehension depends, though not exclusively, on the knowledge of the words in a text (Nagy & Scott, 2000; Kamil, 2004). Knowing the meaning of words not only helps the reader get the main idea in the text, but it also helps him to infer the meaning of unknown words correctly. Other national and international studies have provided evidence with regards to the importance of having a wide vocabulary in written composition (Piacente & Tittarelli, 2008; Silvestri, 2009).

According to Graves, Juel and Graves (2001), the mastery levels of words involves the accurate and complete meaning of words, the more general knowledge of the use of words and their recognition when seen in writing. Nevertheless, learning the meaning of words is not enough to encompass the field of denotations and connotations which imply a textual level. The knowledge of vocabulary is not mastered once and for all; rather, it is

enlarged throughout life. It is acquired gradually, by means of many language experiences, but also, through explicit teaching (Kamil, 2004).

**Previous Knowledge.** With regards to the information a person has, it refers to the prior knowledge that one has managed to acquire depending on one's life experiences, which is stored in our long term memory. It refers to a complex of relations of forms and dimensions. Among these relations, three categories have been stated: linguistic knowledge, schooled and unschooled knowledge, and subjet-matter knowledge (Alexander & Jetton, 2000).

When dealing with populations that have gone through the elementary, high school and have reached university levels, it is expected that they have general world knowledge and some specific domain knowledge in certain areas. In the same way, they are expected to have linguistic knowledge which goes beyond lexical and extends to the semantic and syntactic levels as well as the pragmatic adequate use of the language. These considerations have an impact on the oral as well as the reading comprehension, particularly when a fluid decoding of the written material has been achieved.

**The Concepts Formation.** Another element, that plays a part in verbal comprehension—and consequently—in reading comprehension, refers to the concepts formation. A concept is a cognitive unit of meaning, that is to say, a unit of knowledge. In order to form a concept, it is necessary to classify the elements, words, situations, events, i.e. assigning those categories. One of the matters involved corresponds to the recognition of proximate gender and the specific difference, which is closely linked with the possibilities of definition that clarify the meaning of the terms to be considered. The proper gender refers to that feature that members of a species have. The specific

difference is the characteristic that distinguish the object that wants to be defined from the others.

On the other hand, it can be stated that conceptual difficulties may refer to the existing relations between the meaning of new words and pre-existing knowledge.

Many times, such words can constitute new elements for concepts that are already possessed. It is therefore required to acquire new factual information or a new system of concepts (Nagy & Hiebert, 2011).

**Verbal comprehension evaluation: Vocabulary, Information and Similarities tests**

There are many instruments and procedures whereby verbal comprehension can be evaluated. In the case of the Verbal Comprehension Rate from Wechsler Scales to measure the adults and teenagers Intelligence (Wechsler, 2002) three tests have been included: Vocabulary, Similarities and Information.

In order to analyze the lexical range, the vocabulary Subtests demands that the meaning of a list of terms be explained. Thus, it consists of analyzing the levels of lexical comprehension.

In the Information Subtest, we investigate general knowledge, usually sensitive to learning, interests and intellectual curiosity, attention to the environment and the richness of the world that surround us. In the educational environment, analyzing the student's previous knowledge is crucial in order to design the teaching-learning process, largely because it shows what must be specifically explained or omitted. Naturally, at university studies, not only the general world knowledge but also those specific domains gain greater relevance

The Similarities Subtests has term pairs referred to object, situations, which, in some cases, correspond to concrete entities, in others, to entities which are more abstract. Finding the similarities between those terms enables them to be assigned either abstract, functional or concrete/tangible characteristics, in relation to the proper gender, and the specific difference that may correspond.

At the same time, in the Information Subtest, responses from questions about several domains are elicited, ranging from those which refer to everyday life situations or knowledge to others of a more abstract nature or linked to more specific domains.

The implications of verbal comprehension in reading comprehension have led to posit a number of questions in this paper in terms of the student's verbal comprehension in relation to their reading/writing performance. These can be formulated as follows: What is the students' lexical range when entering university, once graduating from high school? What are their possibilities to elaborate concepts? What information-general previous world knowledge do they have? What is the type of knowledge involved in each of them?

To that end, the following objectives have been specified for the ongoing research:

**Objetives**

- To examine the students verbal comprehension
- To carry out the preliminary analysis of the findings obtained which allows us to adjust the verbal comprehension evaluation instruments and/or procedures

## Methods

### Subjects

60 subjects were chosen: (54 women and 6 men, with an average age of 22,48 years, ranging from 19 a 36 años), attending the third year of Psychology Course of Studies in U.N.L.P (National University of La Plata) who came from the same town in the Buenos Aires State, Argentina.

### Materials and procedures

The Subtests from the Verbal Comprehension Rate from Wechsler Scale Third Revision to Measure Intelligence in Adults-WAIS III were used (Wechsler, 2002)[1].

The Subtests were applied collectively with no time limit. To this end, a special protocol was prepared with specific written instructions. Their reliability was analyzed by comparing the results of individual canonical applications with those of this new modality.

The central tendency and variability measures were estimated. Scoring was grouped into three categories for each of the subtests and for the total rate (< pje. 10, pje. 10 to 13 and pje. >of 13), in order to determine the number of Subjects who obtained scores in each of them. The differences between average in the three subtests and the percentages differences between the categories were calculated. A qualitative analysis was carried out of some of the responses to certain items that enable us to arrive at preliminary interpretations in terms of the errors made.

## Results

### Verbal Comprehension

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[1] Spanish traduction and adaptation, Editorial Paidós (Argentina).

The scales scoring range for each of the tests was: Vocabulary: 7-13, Analogies: 7-12, Information: 5-14.

The average scores in each category proved to be similar to the normative data. Deviations standard were few showing a greater homogeneity. There were no statistically significant differences among them.

Table 1

*Means and Standard Deviations for Scores on the Verbal Comprehension Subtest*

| Subtests | Media | DS |
|----------|-------|------|
| Vocabulary | 10,56 | 1,53 |
| Similarities | 10,35 | 2,60 |
| Information | 9,83 | 2,18 |

The Subjects percentages of the chosen categories for total scale scores (< 10, de 10 to 13 and > 13), shows that the majority belongs to the first two categories, with only few obtained a greater score than a deviation from the average standard.

When the percentages from each subtest are examined individually, in the case of the Vocabulary subtest, no score is located in the higher category; in the case of the Information subtest, only a few percentages do so.

Table 2

*Percentage of subjects in various categories of scores*

| Subtests | Pje.< 10 | Pje. 10-13 | Pje. >13 |
|----------|----------|------------|----------|

| | | | |
|---|---|---|---|
| Vocabulary | 26,09% | 73,91% | - |
| Similarities | 39,13% | 47,82% | 13,04% |
| Informatión | 43,48% | 52,17% | 4,34" |
| Total | 36,23% | 57,97% | 5,79% |

However, regardless of the group performance in the scores achieved, it is worth analyzing some examples from the answers provided which illustrate, with greater detail, the issues of vocabulary range, formation of concepts and previous knowledge.

### A. Vocabulary

Ítem 9: Ayer: "Día después de hoy".

Ítem 12: Diverso: "Confuso, raro".

Ítem 20: Plagiar: "Rezo"

Ítem 21: Tangible: "Algo frágil"; "Flexible".

Ítem 22: Acueducto: "Espacio entre dos cosas"; "Componente del sistema nervioso".

Ítem 23: Balada: "Danza".

### B. Similarities

Ítem 9: Mesa-Silla: "Para comer"

Ítem 13: Huevo-Semilla: "Su forma", "son alimentos", "En gallina (¿) la gallina come semillas y pone huevos".

Ítem 14. Vapor-Niebla: "No dejan ver"

### C. Information

Ítem 5. ¿Qué es un termómetro?: "Movimiento de la tierra".

Ítem 7. ¿En qué continente está Canadá?: "En América del Sud".

Ítem 11. ¿Quién pintó la Capilla Sixtina?: "Leonardo da Vinci"

Ítem 22. Nombre tres clases de vasos sanguíneos del cuerpo humano. "RH, plasma, plaquetas"

Ítem 24. ¿Por qué fue famosa Marie Curie?: "Porque cantaba".

These results, regardless of the number of right and wrong percentages, lead us to focus on the characteristics of the errors. In the Vocabulary Subtest, even though the answers show a lack of familiarity with the semantic field of the given word, what draw our attention in particular are those responses to certain items. In some cases, we are dealing with frequently used words for students who have reached further studies, such as "yesterday" or "diverse" and they are expected to be known. In other cases, the errors arise from interference among terms and concepts, such as in the definition provided of "plagiar" as "rezar" ("to pray"), possibly due to its strong resemblance in Spanish with the word "plegaria" ("prayer"); or in the definition of "acueducto" as "componente del sistema nervioso" ("component of the nervous system").

In the case of the Similarity Subtest, the level of abstraction of some of the responses was striking—most of which do not exceed the concrete level—which shows there are difficulties with the expected level at university.

Finally, in the Information Subtest, we can point out certain confusions with regards to general and specific knowledge as it can be observed in the examples of the items provided above.

Nevertheless, the errors are, at first sight, not always of the same nature. For instance, the response in item 11refers to a type of knowledge of painters that characterize a certain time, though they are obviously confused, whereas, in other examples, such as item 24 a "contaminated" response with knowledge and current interests is given.

## Conclusion

In this paper, we investigated the performance of students by means of tests aimed to assess verbal comprehension, on the basis of the importance it has in reading comprehension and written production. Its objective was to use elements of judgment from the preliminary analysis carried out in the pilot test which allows us to adjust the procedures and/or instruments used when evaluating the actual sample.

Firstly, we noted that the levels of performance in university students are alike, even though more homogeneous than those of the normative population. They call our attention as we would expect scores to be higher, considering that we are dealing exclusively with university subjects, who, therefore, have better education opportunities.

Concomitantly, there are no subjects with higher scores than average in the Vocabulary subtest and a reduced percentage of subjects achieve higher scores in the Information subtest.

Secondly, it seems promising to deal with not only the scores obtained but also with the type of errors made. It is not a matter of simply not knowing the terms, a lack of general knowledge or the formation of concepts. In some cases, rather, it is a question of semantical and conceptual distortions. This requires a more comprehensive analysis which would allow us to identify with greater accuracy the reasons for the mistakes made in the answers provided.

Students attending halfway through a university course of studies are expected to have more extensive and precise knowledge of words, wider general information and be able to conceptualize categories in relation to the next gender and specific difference. It is, therefore, necessary to reflect upon the teaching of general and specific vocabulary, its accurate use, and the importance of general world knowledge and specific domain knowledge as well as the conditions that enable to arrive at the appropriate conceptualizations.

The literature on the subject insist, with greater frequency, on the importance the vocabulary, previous knowledge and the formation of concepts assume to arrive at a deeper understanding of a text, i.e., to the construction of *a situation models* (Kintsch & Rawson, 2005). Concomitantly, there are progressively more researches on the differentiated strategies to promote them thanks to the decisive role the play in, among other things, successful learning from texts.

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