



Research Paper

## A Look at Verbal Reasoning Deficits in the Entrance Exam to The Higher Technical University Level

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### ABSTRACT

Admission to higher education has become a filter of candidates, to include and exclude the most suitable for university studies. However, mechanisms have been implemented to make this process more effective, such as the Mexican EXANI II, which assesses various areas of knowledge. This paper focuses on verbal reasoning, as a fundamental skill for communication and a necessary skill to be used during professional training. A brief analysis is carried out of the 2018-2019 generations, which showed a very low performance concerning the mastery of the mother tongue, following a documentary and quantitative methodology.

**KEYWORDS:** verbal, reasoning, proficiency, Spanish, EXANI II

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### I. INTRODUCTION

Higher education has faced great challenges since the beginning of the 21st century, due to the impact of globalization, technological development and economic growth, as well as the Information and Communication Technologies (ICT) revolution. These changes have inevitably forced institutions to improve the quality of the education they offer, which is why selection mechanisms have been established for new entrants to guarantee the quality of their training, to produce competent human capital for the labour market.

However, the instruments used vary around the world. In the case of Mexico, a standardized test is used to provide results to objectively select those applicants who are suitable for higher education studies. The case presented here is of great concern due to the low scores obtained by candidates, specifically in terms of mother tongue proficiency.

### PROBLEMATIC

For some years now at the technological University of Altamira (UTA), it has been intuitively perceived that students in their fifth term seem to be losing their written competence when their stay reports are reviewed and evaluated, they are plagued with errors that are repeated time after time in each revision. Likewise, the writing of both sentences and paragraphs lacks sufficient logical coherence; there is an abundance of inserted sentences, ambiguous sentences, mutilations, cacophonies, lack of metatextual connectors, etcetera.

This raised the question of whether the actual literacy process is impacting positively or negatively on the learners' education. The process, visualized as a black box, is fed by: applicants to higher secondary education in the region through the standardized test National Entrance Exam to Higher Education (EXANI-II) applied by the National Center of Evaluation for Higher Education (CENEVAL), an exit of the generational cohort and a recirculation coming from students who have already exhausted their initial opportunity to finish their studies. The background to this is the previous level of education, little formal reading and writing, no supervision of written products, a lack of discursive logic to link ideas when trying to put them in writing, whose roots are to be found in the very selection process by which they entered the institution.

### II. LITERATURE REVIEW

The public university in Mexico is the most popular higher education option for high school graduates, for (mostly) economic reasons, as only this modality offers them access to and permanence in the various

services offered. Due to excessive demand, they are subject to strong pressures which increase year by year. Despite the increase in the number of places offered, they are insufficient to meet the demand of the entire population. Therefore, access to public universities has become a selective process (García, 2005), employing mechanisms that serve as a filter for new applicants, especially those with the greatest potential to study a professional career, whose mastery of skills and knowledge establishes a greater probability of academic success (López L. I. R., Echazarreta G., C. M., Pech C., S. J. and Gómez O., B. A., 2010).

Among the instruments and criteria used in recent times to select incoming students in Mexico is the EXANI II, which measures skills and knowledge necessary for higher education studies. It has a standardized design with pre-designed fixed rules, development, application and scoring, to place the scores of test-takers and groups about nationally and regionally established scoring norms. It is objective because it employs reliable and valid measurable scoring processes (CENEVAL, 2009).

The EXANI-II is a test of reasoning and basic knowledge, oriented to those who intend to enter undergraduate studies; it presents "five answer options; it does not contain essay questions and its answers do not depend on interpretation; finally, it diagnoses the academic situation of applicants through carefully designed and nationally tested tests" (Cortés and Palomar, 2007, p. 201). In total, the test has 180 questions that assess verbal reasoning, mathematical reasoning, contemporary world, natural sciences, social sciences and humanities, mathematics and Spanish (Corté and Palomar, 2007).

*Verbal reasoning*

In the study carried out by López et al. (2010) a very low level of student performance is perceived, specifically verbal reasoning, as shown in table 1.

**Table 1. EXANI II Performance.**

Areas of EXANI II	Levels of Performance							
	Very low		Low		High		Very high	
	f	%	f	%	F	%	f	%
Verbal reasoning	157	35.7	89	20.2	131	29.8	63	14.3
Mathematical reasoning	170	38.6	89	20.2	112	25.5	69	15.7
Spanish	165	37.5	72	16.4	123	28	80	18.2
Mathematics	129	29.3	123	28	84	19.1	104	23.6
Natural science	171	38.9	65	14.8	133	30.2	71	16.1
Social science	119	27	163	37	71	16.1	87	19.8
Contemporary world	201	45.7	104	23.6	76	17.3	59	13.4
English	145	33	102	23.2	90	20.5	103	23.4
<b>Global</b>	<b>119</b>	<b>27.0</b>	<b>113</b>	<b>25.7</b>	<b>105</b>	<b>23.9</b>	<b>103</b>	<b>23.4</b>

Source: López et al. (2010).

For their part, Bringas and Pérez (2014), in their analysis of the students' performance after taking the exam, found that 31 and 16 students respectively scored between 760 and 970 below the theoretical average in Verbal reasoning and Spanish. This shows that they cannot "identify and apply elements of language that allow the creation and organization of meaningful messages; the second demands understanding explicit information in texts of medium complexity and interpreting an author's intentions and purposes in argumentative and narrative texts" (CENEVAL, 2012).

In 2019, the EXANI II was administered to students in the last year of baccalaureate or equivalent who aspired to enter higher-level studies, held in the state of Aguascalientes in April of the same year. Now, according to the so-called CENEVAL Index, 700 points is the minimum score and 1,300 is the maximum; in case of achieving a score close to 1,000, it means having an expected average performance.

However, of the 279 participating institutions in the state, 205 obtained an average score of fewer than 1,000 points, i.e. 73% did not achieve the expected average. However, it was noted that one of the areas in which most work needs to be done is that of language structure, which assesses the ability to identify and apply elements of language to create and organize meaningful messages. In other words, it is the management of oral or written expression, verbal reasoning (GUÍA EDUCA, 2017, para. 9).

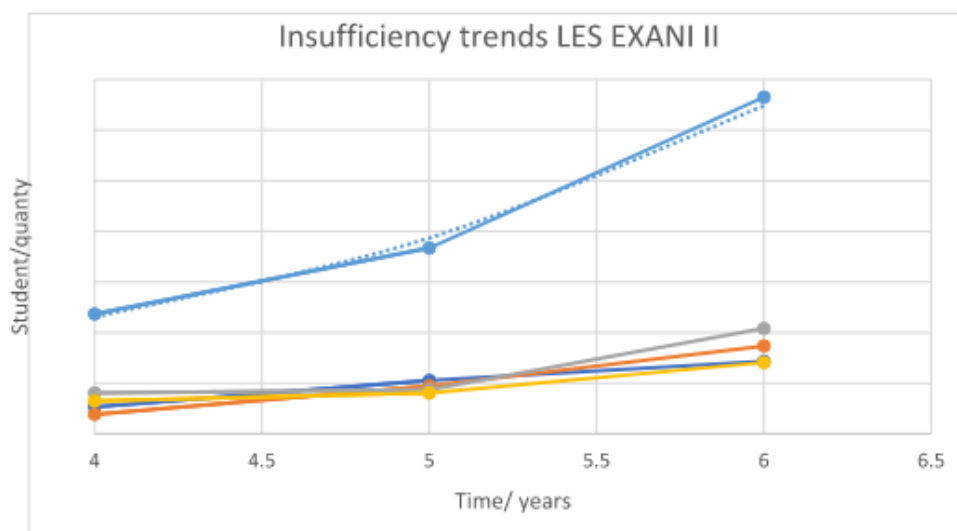
This is the reason to analyze the particular situation in the UTA, classes 2018-2019. Due to the low written proficiency observed on the fifth quarter term's students and because there aren't studies carried out for identifying the root of the problems, for taking the necessary measures, contributing to enhancing not only the verbal reasoning but also the capacity to write accord to the superior level studies.

### III. METHODOLOGY

The CENEVAL EXANI-II test applied at UTA to incoming students from the higher secondary education system consists of two sections, the Admission section, with 148 items, and the Diagnostic section, with 90 items. The Diagnostic section aims to reveal the level of skills needed to perform in the first four-month period of the chosen career. This test evaluates 4 skills: two disciplinary skills per the academic area, written language and English, and is evaluated at three levels: no opinion (SD), when the student fails to answer 20% or more of the questions, insufficient (I), when he/she does not answer the expected standard, and sufficient (S) when he/she meets the established standard.

Figure 1 shows the trend of insufficient Written Language Skills (LES) for the generational cohorts tested from 2018 to 2019. There is an overall exponential trend with a 99% upward adjustment, with an annual rate of  $7.54e^{0.5166x}$ . In 2019, 261 out of 900 applicants (29%) had this deficiency.

Figure 1. Generational cohorts at UT Altamira. An upward trend can be seen in the exponential regression equation for the periods evaluated, 2018 to 2019.



Source: Rossette y Nava (2021).

### IV. RESULTS

The above suggests a strong pressure on the black box testing its capacity to digest through its training so that learners recover their written competence because of their initial tendency. However, a factor external to academics is the strong pressure that the institution receives from the government in office to absorb the largest number of baccalaureate graduates, even without having accredited the EXANI II. This implies not only an imbalance in the academic level of the students but also a strain on the teachers when carrying out the literacy process, due to the presence of students with deficient verbal reasoning, which causes double work.

This happens because the state aims to establish higher education coverage statistics without considering the cognitive-educational gaps of those students who, when accepted without possessing both the knowledge and skills required by the educational level (Herrera, 2019), ultimately end up abandoning their studies due to their incompetence, increasing dropout due to failure, because of unequal conditions.

Unfortunately, according to Ibarrola (2012):

The demand of high school graduates to enter public universities [which have] certificates, regardless of the modality that issues them, are valid to demand university entrance, although they do not support in the same way the quality of learning (...), [with insufficient] knowledge to pass the entrance exams to programmes and universities that raise their standards according to the demand they have (p. 18).

### V. CONCLUSION

- It has been shown that the low level of verbal reasoning of new applicants, which, when accepted into the institution, generates an academic disadvantage, due to the lack of knowledge and skills in the mastery of the mother tongue (Spanish).
- This is a determining factor in the academic performance of students when facing specialized subjects, which take for granted, the mastery of written competence and verbal reasoning, to carry out written work of various types and demands.

- It is necessary to address this situation from the lower levels: secondary and baccalaureate, to prevent low levels of performance in the CENEVAL exam, particularly in verbal reasoning.
- The presence of high population growth rates produces effects that have repercussions on the quality of education offered, distorting it and, consequently, producing professionals who present serious deficits upon graduation.
- It is essential that, from an early age, skills are fostered so that people are capable of managing their knowledge, in particular, the use of verbal reasoning and orienting it towards the identification and resolution of different situations, which is not always the case.

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