

VAVEL MEDIO: CRITERION-RELATED VALIDITY EVIDENCE THROUGH READING COMPREHENSION PERFORMANCE

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ABSTRACT

Following last guidelines of the American Psychological Association (AERA, APA, NCME, 1999), sources of evidence of test-criterion validity for a vocabulary comprehension test (VAVEL Medio) are reported. Correlation between vocabulary measures assessed by VAVEL MEDIO and reading comprehension measures estimated by Test de Estrategias de Comprensión (Vidal-Abarca, Gilabert, Martínez et al., 2007) was obtained using a group of 103 Grade 5-6 students. As we could expect according to the broad prior knowledge about the links between oral and written language, the results show a positive and significant association between both variables, providing sources of evidence of criterion-related validity for our vocabulary test.

OBJECTIVES

To provide sources of evidence of Criterion-related Validity for VAVEL Medio:

- Studying the relationship between vocabulary comprehension and reading comprehension performance
- Analyzing the relationship between vocabulary and reading comprehension regarding academic performance in language subject
- To determine the influence of vocabulary on efficiency measures (efficiency is defined as a combination of time and score in a reading comprehension task)

ANTECEDENTS

- Oral language skills (lexical knowledge is one of them) are connected to reading proficiency. Vocabulary plays an important role in the development of reading comprehension. In fact, recent proposals that are based on the triangle model (Plaut et al., 1996), as the one built by Bishop & Snowling (2004), comprises a semantic pathway that consists of mappings between semantic, phonological and orthographic representations.
- Individual differences in the semantic pathway should be related to individual differences in reading comprehension. It is reasonable to suppose that child's oral vocabulary knowledge is a suitable index of semantic knowledge. So, reading comprehension performance would constitute a good criterion to obtain evidence of validity for our test of vocabulary VAVEL Medio.
- Previous research has shown relationship between vocabulary and reading comprehension, both measured with tests recently published in our country; $r = .71$ between "text comprehension subtest" of PROLEC-R (Cuetos et al., 2007) and PPVT-III Spanish version (Dunn, Dunn, & Arribas; 2006)

TEST, MEASURES AND VARIABLES

Vocabulary comprehension assessed by VAVEL Medio (work in progress)

- Transformed z-Score in Vocabulary Comprehension (V) $N(100,15)$
- Level of vocabulary: High $V > 110$; Average $90 \leq V \leq 110$; Low $V < 90$

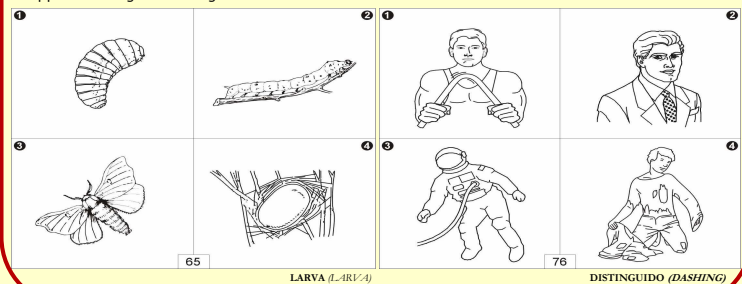
Reading Comprehension by TEC (Vidal-Abarca, Gilabert, Martínez et al., 2007): composed by two expository texts and 20 multiple choice questions about explicit ideas, anaphoric inferences, knowledge-based inferences and macro-ideas construction

- Transformed z-Score in Reading Comprehension (RC) $N(100,15)$
- Level of Reading Comprehension: Good $RC > 110$; Average $90 \leq RC \leq 110$; Poor $RC < 90$
- Time employed in the reading comprehension test (reading and question solving included)
- Efficiency in reading (combining time and z-score in RC): Slow & Poor RC (1); Slow & Average RC (2); Fast & Average RC (3); Fast & Good RC (4)

Academic performance in language subject: Language Mark (LM)

VAVEL MEDIO

- Composed by 103 Items (59 nouns, 23 verbs, 21 adjectives)
- The same procedure as that for de more commonly used Peabody Picture Vocabulary Test (PPVT-III): to point out the image corresponding to target word
- Application: ages 9 through 16



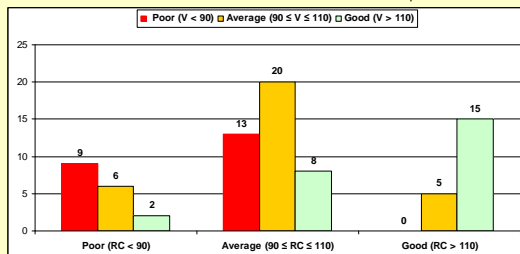
PARTICIPANTS

- 103 children were assessed from rural (36) and urban contexts (67)
- 25 were excluded (11 no Spanish spoken at home; 14 with recognized special educational needs)
- 78 were selected:
 - Distribution by sex: 43 boys, 35 girls
 - Distribution by grade: 39 Grade 5 and 39 Grade 6
 - No differences in vocabulary comprehension by sex ($p = .714$), rural or urban context ($p = .090$), and grade ($p = .372$) were found
 - Mean age -years;months-: 11;2 (s.d.=0;5; range=10;9-12;7)

RESULTS

Pearson Correlation	Vocabulary	Reading Comprehension
Reading Comprehension	0,53 ***	
Language Mark	0,55 ***	0,51 ***

*** $p < .001$

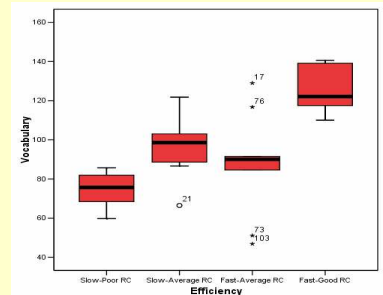


Cross-tab: Reading Comprehension and Vocabulary Levels

Variable and order	R ²	ΔR ²	ΔF	β
MODEL 1				
Vocabulary	0,297	0,297	32,133***	0,379
Reading Comprehension	0,367	0,070	8,232**	0,312
MODEL 2				
Reading Comprehension	0,264	0,264	27,237***	0,312
Vocabulario	0,367	0,103	12,179***	0,379

** $p < .01$ *** $p < .001$

Regression Analysis for Language Mark



Efficiency	Count	%	Mean	Sd
Slow-Poor RC	5	15	74,3	10,4
Slow-Average RC	14	42	97,9	14,2
Fast-Average RC	9	27	87,7	26,4
Fast-Good RC	5	15	125,8	13,5

CONCLUSIONS

- There is a positive significant relationship between reading comprehension performance and vocabulary assessed by Vavel Medio. That provides source of evidence of criterion-related validity for our vocabulary test. 56.4% of the subjects were classified in the same category according to their scores in vocabulary and reading comprehension.
- There is also a positive significant relationship between academic performance in language subject and vocabulary assessed by Vavel Medio. We also found a positive significant relationship between reading comprehension and mark in language.
- In this sample (Grade 5-6 students), when regressed on language mark, vocabulary explained around 30% of the variance of that variable.
- It would be interesting to analyse the relationship between Vavel Medio and TEC measures, and the relationship of these measures with language mark, when applied to secondary school students. When applied to 10-16 years old students, previous research reports a correlations of 0.33 between TEC and mark in language; PROLEC-SE and mark in language correlation was 0.37
- With the cautious of assuming the small sample size of the groups defined by efficiency in reading, we can inform of dramatic differences in vocabulary performance when comparing the efficiency extreme groups (slow-poor RC vs. fast-good RC). Only the most efficient group (fast-good RC) showed statistically significant differences in vocabulary with respect to the other efficiency groups.
- Obviously, a high level of vocabulary does not necessarily leads to a good level in reading comprehension. Nevertheless, it is interesting to note that: a) there is no a single child with good level in reading comprehension, and low level in vocabulary; b) just two children with poor reading comprehension showed simultaneously high level in vocabulary; and c) just a single child with high vocabulary and good reading comprehension appeared to perform slow in the reading comprehension task. Recent studies (for a review see Cain, Oakhill, & Lemmon; 2004) point out to the reciprocal relationship between the studied variables, more than causal mechanism between them. The results of our study provides support to the idea that there are common skills or mechanisms that contribute to the determination of lexical knowledge and reading comprehension

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