

Internal structure and standardized scores of the Spanish adaptation of the EGRA (Early Grade Reading Assessment) for early reading assessment

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Abstract

Background: The EGRA (Early Grade Reading Assessment) is an assessment tool containing the main predictors of reading learning disabilities based on the National Reading Panel (NRP) (National Institute of Child Health and Human Development, 2000). This study has two main objectives: First, to analyze the internal structure of the EGRA, and second, to examine the validity and normative data for first and second grade primary school students in a Spanish-Speaking population. **Method:** This study had a sample of 400 children (196 female and 204 male) attending early grades of Primary School, between 6 and 8 years of age. **Results:** Our findings indicate that the EGRA has acceptable psychometric properties and an internal structure that is based on the two main factors of “decoding and comprehension” and “oral comprehension”. **Conclusions:** We believe that the normative data collected from this study may be useful for the early detection of ‘at risk’ Spanish children having reading disabilities, as well as for planning of early reading education.

Keywords: Early grade reading assessment, EGRA, reading disabilities, National Reading Panel.

Resumen

Estructura interna y baremación de la adaptación española del EGRA (Early Grade Reading Assessment) para la evaluación temprana de la lectura. Antecedentes: EGRA (Early Grade Reading Assessment) es un instrumento para la evaluación temprana de la lectura e incluye los principales componentes que según el National Reading Panel (NRP) (National Institute of Child Health and Human Development, 2000) predicen las dificultades de aprendizaje en lectura. El principal objetivo de este trabajo ha sido, por una parte, estudiar la estructura interna del EGRA y, por otra, analizar su validez y establecer datos normativos para 1º y 2º curso de Educación Primaria en población escolar española. **Método:** se seleccionó una muestra de 400 alumnos (196 niñas y 204 niños) pertenecientes al primer ciclo de Educación Primaria, cuyas edades oscilaban entre 6 y 8 años. **Resultados:** los datos apuntan a que el EGRA reúne las características métricas exigibles a este tipo de pruebas y que su estructura interna responde a dos factores principales como sería la “descodificación y comprensión” y la “comprensión oral”. **Conclusiones:** los datos normativos obtenidos podrían ser utilizados para la detección temprana de niños españoles con riesgo de presentar dificultades de aprendizaje en la lectura, y también para la planificación de la enseñanza de la lectura en los primeros niveles de la escolaridad.

Palabras clave: evaluación inicial de la lectura, EGRA, dificultades de aprendizaje en lectura, National Reading Panel.

Article 71 of Spanish Organic Law 2/2006, of May 3 on Education corresponds to the assurance by the educational administration of the necessary resources to ensure that students requiring special educational assistance, based on their specific educational support needs (NEAEs for its initials in Spanish), including those having Specific Difficulties in Learning to Read (DEAL for its initials in Spanish), are capable of achieving the maximum potential of their individual capabilities. It emphasizes the earliest possible identification and assessment of students with NEAEs through the use of educational and psycho-educational support teams

of the Department of Education. This has also been reflected in recent education law (Organic Law 8/2013, of December 9 for the improvement of educational quality). And therefore, these are the entities that should encourage early and effective assessment for the earliest possible detection of reading difficulties, avoiding potential years of academic delay. Longitudinal studies have found that these problems often persist, and children who struggle with reading during the early grades of primary school are most likely to continue to have reading difficulties throughout their education (Vaughn et al., 2003). However, to the best of our knowledge, no tools have been designed specifically for the early detection in the cultural and educational contexts specific to the Spanish school population. Furthermore, these tools include the main components that, according to the National Reading Panel (NRP) (National Institute of Child Health and Human Development, 2000) predict DEAL, and many of them have also been identified as good predictors in the Spanish language (Jiménez & O’Shanahan,

2008). The NRP consisted of a committee of experts that met in 1998 for a two-year period, upon mandate of the US Congress, in order to determine the state of knowledge on reading, reading instruction and reading disabilities, based on scientific publications including impact indices. Scientific research has clearly revealed the elements or components that, when correctly applied, guarantee success in reading instruction and in the treatment of reading disabilities. Furthermore, the theoretical-practical model upon which the NRP guidelines are based, focuses mainly on analytical phonetic methodology, discarding the more generalized approach to reading education. By definition “direct instruction is an approach to teaching that is skills-oriented and implies teacher-directed practices. It emphasizes the use of small group and carefully articulated lessons in which cognitive techniques are broken down in small units, sequenced deliberately and taught explicitly” (Carnine, Silbert, Kame’enui, & Tarver, 2004).

Main components of reading instruction according to the NRP

One of the main components is *phonological awareness*, the capacity to reflect on different segments of the oral language. It involves reflection on phonemes, syllables or rhymes. Recent studies have revealed that phonological awareness and, specifically, phonemic awareness favors reading acquisition and is directly related to success in this area. Phonemic awareness is much more relevant than syllabic and intra-syllabic awareness, and it has been suggested that once Spanish children learn the alphabet and have developed an adequate degree of phonemic awareness, they no longer need to categorize words by their intra-syllabic components in order to successfully read (Jiménez & Ortiz, 2000; Serrano, Defior, & Jiménez, 2005). However, tasks based on the identification of the initial sound and the classification of words by their initial sound have a direct relationship with reading acquisition in Spanish (Herrera & Defior, 2005).

Another component is *alphabetic awareness and the learning of phoneme-grapheme correspondences (PGC)*: various studies have revealed that knowledge of the letters of the alphabet, prior to formal instruction of the same, is also an excellent predictor of learning to read over the short and long term (Muter, Hulme, & Snowling, 1997; Vellutino & Scanlon, 2002; Whitehurst & Lonigan, 1998). In the Spanish language, various studies have been conducted with Chilean children, revealing that those children with knowledge of at least 5 letters of the alphabet when beginning first grade have a significantly higher reading level later on, in comparison with their classmates (Bravo-Valdivieso, Villalón, & Orellana, 2006). The regularity of the Spanish language is the best context for the self-learning of new words once the rules of grapheme-to-phoneme conversion are learned.

Also, *fluency* is considered to be another component. Although fluency does not have a single definition, when discussing fluent readers, we refer to the ability to read rapidly, accurately and with expression (NICHD, 2000). Automatically recognizing words is an important component of skillful reading, which translates into speed, autonomy and the use of cognitive resources (Schwanenflugel, Hamilton, Kuhn, Wisenbaker, & Stahl, 2004), and it indirectly contributes to comprehension. Thus, fluency has been found to predict comprehension (Fuchs, Fuchs, Hosp, & Jenkins, 2001).

As for *linguistic competence (vocabulary and oral comprehension)*, this is one of the critical skills that children also

begin to develop when learning to read. It refers to comprehension and oral expression skills as well as knowledge and control of the oral language, including the phonological component, vocabulary, morphology, grammar and pragmatic skills. Vocabulary knowledge, for example, is a critical skill that affects the processes of reading comprehension and, specifically, the higher level language process such as grammatical processing, the construction of schemata and text models (Adams & Collins, 1977; Chall, 1987). Ultimately, normally achieving readers may tolerate a few unknown words when reading a text without it affecting their comprehension as they can usually determine the meaning of these words based on the context. However, it is understood that if the proportion of unknown words is very high, it is very difficult to understand what is being read (Carver, 1994).

To the best of our knowledge, no standardized tools have been designed for the assessment of early reading acquisition in our cultural and educational setting, and specifically, none including the main components as defined by the NRP to predict the DEAL. Therefore, the main objective of this study is to analyze the internal structure of the Spanish adaptation of the EGRA (*Early Grade Reading Assessment*), its validity and the normative data for Spanish children in the first cycle of primary school. The EGRA has been adapted to various countries and languages, including Mali (French, Bamanankan, Bomu, Ffulde and Songhoy), Senegal (French, Wolof and Pulaar), Kenya (English, Kikuyu, Kiswahili and Luo), Uganda (English, Lango and Luganda), Liberia, Haiti (French and Creole), Guyana, Nigeria, Guatemala, Nicaragua (Miskitu and Creole) and Honduras.

Method

Participants

Study participants were students attending 12 centres located in urban and surrounding areas of Santa Cruz de Tenerife and Las Palmas de Gran Canaria (The Canary Islands). Eight of these were public centres, two were charter and two were private. None of the centres used the global method to teach reading. The total number of participants was 400 (204 boys and 196 girls) including different socio-economic levels. The sample was distributed by Primary school grades as follows: 1st year of Primary school ($N = 193$, 102V, 91M; age $M = 76.4$, $SD = 5.81$); and 2nd year of Primary school ($N = 207$, 102V, 105M; age $M = 89.5$, $SD = 5.16$). Similarly, the teachers of these children filled out the Spanish adaptation of *The Hong Kong Specific Learning Difficulties Behavior Checklist* (Ho, Chan, Tsang, & Lee, 2002) and those children having a score equaling or exceeding $P_c 75$ were classified as “at risk” of having reading disabilities. The “at risk” and “not at risk” groups were balanced by gender, $\chi^2(1) = .39$, $p = .23$, and no significant differences were found between the groups based on age, $F(1, 398) = 0.47$, $p = .49$. As sample exclusion criteria, participating students did not have intellectual, sensory, physical, mental or motor deficiencies. For these purposes, the NEAE reports from each center were considered.

Instruments

The Early Grade Reading Assessment (EGRA) (RTI International, 2009). The designing of the EGRA began in October of 2006 when the USAID (*United States Agency for International*

Development) and their EdDATA II project appointed RTI International (*Research Triangle Institute*) to create an instrument for the evaluation of reading in the early school grades. Its purpose was to document student performance in reading skills during the early grades, in order to inform ministries and contributors of educational system needs for the improvement of reading instruction. Furthermore, the EGRA was designed to complement (and not to replace) already existing evaluations. Its adaptation to the Spanish language and its revision were carried out by the first author of this article, upon request of RTI. Amber Gove is the author of the test manual, with contributions made by Luis Crouch, Amy Mulcahy-Dunn and Marguerite Clarke. This manual may be consulted in Spanish (free of charge) at the following link: http://pdf.usaid.gov/pdf_docs/PNADS441.pdf.

Though the EGRA does not have a totally fixed set of sub-tests, most applications have the following sub-tests: knowledge of letter sounds, reading of familiar words, reading of pseudo-words, paragraph reading and comprehension (i.e., fluency of oral reading and reading comprehension), phonological awareness (i.e., identification of the initial sound, identification of words beginning with the same sound), oral comprehension and dictation.

Knowledge of letter sounds. This sub-test measures the knowledge of sounds of letters of the alphabet represented in different forms, upper and lower cases. It consists of asking the student to say the sound of the letter that is presented to him/her in a list (in rows of 10) and in order. Scoring in this sub-test is calculated based on the number of correctly read letters in one minute. Reliability was calculated using the test-retest method ($r = .60$).

Reading familiar words. This sub-test measures the ability to read familiar words containing one or two syllables. The student should read 50 words that are presented to him/her on a sheet of paper, in a series of 10 rows of 5 words each. The examiner records the number of words that are read correctly in one minute. Reliability was calculated using the test-retest method ($r = .77$).

Reading pseudo-words. This sub-test measures the ability to make correspondences between graphemes and phonemes (GPC). For this, a list of 50 pseudo-words with two syllables was presented in 10 rows of 5 items. They were typical Spanish combinations, not including pseudo-homophones (i.e., “harbol”, the pseudo-homophone of “árbol”). Scoring was calculated, again, by the number of pseudo-words read correctly per minute. Reliability was calculated using the test-retest method ($r = .80$).

Paragraph reading and comprehension. This sub-test consists of two sections:

Fluency of oral reading (i.e., oral reading of words in text): measuring the ability to read a text with precision, little effort and at an appropriate rhythm. The child’s score was calculated by the number of words read correctly per minute. Reliability was calculated with the test-retest method ($r = .77$).

Reading comprehension: measuring the ability to respond correctly to different types of questions, including literal questions and inferences regarding a text read by the child (*Cronbach’s* $\alpha = .93$).

Phonological awareness. This sub-test consists of two sections in which time is not measured. Total scoring of phonological awareness is obtained from the sum of both sections:

Identification of the initial sound: consists of the child identifying the initial sound of 10 familiar words made up of more than two syllables. The examiner reads each word out loud two

times and, then asks the child to identify the first sound of the word that was read. Scoring is calculated based on the number of correct responses given (*Cronbach’s* $\alpha = .91$).

Identification of words beginning with the same sound: consists of the child identifying the initial sounds in different words. It contains 10 groups of 3 words each in which two of them share the same sound. The examiner should read each group of words two times and ask the child to state which word starts with a different sound. The examiner should record the number of correct responses given (*Cronbach’s* $\alpha = .78$).

Oral comprehension. This sub-test measures the ability to correctly respond to different types of questions, literal and inferential, regarding a text that the examiner reads to the child. It consists of presenting the student with an oral passage and then asking him/her various questions about the same, which should be responded to correctly using a word or simple response. Paragraphs consist of approximately 50 words and describe an activity or event that is familiar to the child. Children are scored based on the number of correct answers given (*Cronbach’s* $\alpha = .56$).

Dictation. This sub-test measures the ability to write based on a dictated exercise. It consists of dictating a sentence containing 10 words, including at least two words that do not follow the rules of phoneme-to-grapheme conversion. Scoring is based on written production using a simple scale that captures the precision of the vocal and consonant sounds, spelling, spacing, direction of the text and the correct use of upper-case letters and punctuation marks. Each category offers a total of 2 possible points for complete precision, 1 for average precision and 0 for lack of precision ($r = .72$).

The Hong Kong Specific Learning Difficulties Behavior Checklist (Ho et al., 2002). This instrument was created by a research team from the *University of Hong Kong* for the early identification of learning difficulties and to collect information regarding the following dimensions: cognitive skills, language and literacy skills, quantitative skills, social competence and self-control. Its Spanish version includes a Checklist consisting of 51 items for first graders and another 65 items for second graders (see Jiménez, 2010). Scoring obtained in each dimension was calculated as follows: (a = 1) *never*, (b = 2) *almost never*, (c = 3) *infrequently*, (d = 4) *sometimes*, (e = 5) *often*, and (f = 6) *don’t know*. Teachers responded to each of the dimensions for each student in the classroom. Students receiving a final score that was equal or superior to the 75th percentile were considered to be at risk of having reading disabilities.

Procedure

In an initial phase, 12 examiners were trained for a one week period. Six examiners were assigned to the Tenerife centers and six were assigned to Gran Canaria. In the second phase, the EGRA was administered outside of the classroom and on an individual basis during school hours. At the same time, teachers filled out the Spanish adaptation of the *Hong Kong Specific Learning Difficulties Behavior Checklist* (Ho et al., 2002). After six months, the EGRA was once again administered to a part of the sample that did not participate in the experimental program (see Jiménez et al., 2010) in order to calculate the test-retest reliability. Reliability analyses were conducted on a sample of 120 Primary school students and the test was administered on an individual basis in two sessions in a room assigned by the center based on compliance with the necessary physical and acoustic conditions.

Data analysis

Statistical analyses were conducted using SPSS 20.0. A principal-components factor analysis was conducted to identify the underlying factors on this EGRA Spanish adaptation. Second, we analyzed the validity of the EGRA conducting a multivariate general linear model for those sub-tests making up the first factor, and a general linear model univariate analysis for the subtest saturating the second factor. The fixed factor used was the group (at risk or not at risk) and the sub-tests of the EGRA were the dependent variables. Cohen's d effect size was calculated for each comparison (Cohen, 1988). For those sub-tests where it was possible to record a set of items that were additively combined to create an overall score, we used the internal consistency method based on Cronbach's Alpha. On the other hand, when it was not possible to combine these items for the sub-tests, we used the test-retest measure of reliability. Finally, percentiles were calculated for each of the sub-tests making up Factors I and II of the EGRA for 1st and 2nd graders.

Results

In order to determine the relationship existing between the different sub-tests of the EGRA, Table 1 reveals the correlations matrix. It is evident that the correlation sizes obtained for the measures range from .20 to .95 and all relationships are found to be significant.

The first extracted component contains the following sub-tests: reading of familiar words (.961), oral reading fluency (.959), reading of pseudo-words (.917), reading comprehension (.893), dictation (.857), phonological awareness (.703) and knowledge of letter sounds (.589). It may be seen that the sub-tests having the greatest saturation in the factor are those corresponding to: the reading of familiar words, oral reading fluency, reading of pseudo-words as well as reading comprehension. Also included, but with a lower degree of saturation, are dictation writing, phonological awareness and knowledge of letter sounds. On the other hand, in the second component, the sub-test that defines it is primarily that of oral comprehension (.964).

Clearly, factor I is saturated by the sub-tests related to decoding and comprehension; in other words, by those skills that are directly related to the phonological and semantic processing of the written language. On the other hand, factor II is based solely on the "oral comprehension" sub-test, directly related to linguistic processing at an oral level.

Finally, in order to analyze the validity of the EGRA, we conducted a multivariate general linear model for those sub-tests making up the first factor, and a general linear model univariate analysis for the subtest saturating the second factor. In both cases, the fixed factor used was the group (at risk or not at risk) and the sub-tests of the EGRA were the dependent variables. Table 3 collects the measures and standard deviations of each of the sub-tests making up the EGRA based on the risk situation in 1st grade of primary school.

Table 1
Correlations between the different sub-tests of the EGRA (Early Grade Reading Assessment)

	1	2	3	4	5	6	7	8
1. Knowledge of letter sounds	1	.577(**)	.514(**)	.554(**)	.583(**)	.220(**)	.499(**)	.551(**)
2. Reading of familiar words		1	.929(**)	.956(**)	.700(**)	.217(**)	.842(**)	.812(**)
3. Reading of pseudo-words			1	.905(**)	.655(**)	.201(**)	.777(**)	.766(**)
4. Oral reading fluency				1	.686(**)	.205(**)	.869(**)	.815(**)
5. Reading comprehension					1	.575(**)	.195(**)	.751(**)
6. Phonological awareness						1	.320(**)	.627(**)
7. Oral comprehension							1	.226(**)
8. Dictation								1

Prior to factor extraction, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated and the Bartlett's Test of Sphericity (BTS) was conducted to ensure that the characteristics of the data set were appropriate for the factorial analysis. KMO analysis resulted in an index of 0.911 and a significant BTS, $\chi^2(28) = 2694,470, p < .001$. Based on the principal component analysis via varimax rotation, results reveal that there is a factorial structure formed by two main factors or components that together, explain 77.2% of the total variance. It should be noted that the first of these consists of variables explaining 64.7% of the variance while the second explains 12.5%. Table 2 presents the rotated factorial matrix based on the varimax method, in which the extracted component appears as well as the saturation of each of the evaluated functions of the test. To determine the significance of the factorial weights, values over .30 are considered significant, and those approaching .50 are considered very significant (Comrey, 1985). Based on these criteria, two factors or components were found.

Table 2
Rotated components matrix (a)

	Component	
	1	2
Reading of familiar words	.961	.032
Oral reading fluency	.959	.027
Reading of pseudo-words	.917	.004
Reading comprehension	.893	.119
Dictation	.857	.087
Phonological awareness	.703	.318
Knowledge of letter sounds	.589	.255
Oral comprehension	.060	.964

Extraction method: Analysis of principal components
Rotation method: Varimax normalization with Kaiser
a The rotation has converged in 3 iterations

In this initial multivariate analysis of all of the “decoding and comprehension” sub-tests in the 1st grade of Primary school, we found a significant effect for the condition of at risk or not at risk, $\chi(7, 155) = 6.69, p < .001, \eta^2 = .23$. Children that had been identified as being at risk by their teachers based on the *Hong Kong Specific Learning Difficulties Behavior Checklist* (Ho et al., 2002), had significantly lower scores than those who were not at risk in knowledge of letter sounds, $F(1, 161) = 22.2, p < .001, \eta^2 = .12$; reading familiar words, $F(1, 161) = 21.3, p < .001, \eta^2 = .11$; reading pseudo-words, $F(1, 161) = 9.05, p < .01, \eta^2 = .05$; oral reading fluency, $F(1, 161) = 18.5, p < .001, \eta^2 = .10$; reading comprehension, $F(1, 161) = 24.8, p < .001, \eta^2 = .13$; phonological awareness, $F(1, 161) = 28.8, p < .001, \eta^2 = .15$; and dictation, $F(1, 161) = 23.6, p < .001, \eta^2 = .12$. In a second analysis of the “oral comprehension” measure significant differences were also found in the same direction, $F(1, 192) = 5.63, p < .05, \eta^2 = .02$.

Then, the same analyses were repeated for the 2nd grade Primary school students. Table 4 collects the averages and standard deviations of each of the sub-tests making up the EGRA based on the risk situation in 2nd grade students.

The multivariate analysis was conducted on all of the “decoding and comprehension” sub-tests and a significant effect was found for the condition of at risk or not at risk, $\chi(7, 187) = 6.18, p < .001, \eta^2 = .18$. This time, the second graders that had been identified by their teachers as being at risk, based on the *Hong Kong Specific Learning Difficulties Behavior Checklist* (Hoet al., 2002), had significantly lower scores than those who were not at risk, in the reading of familiar words, $F(1, 193) = 19.87, p < .001, \eta^2 = .09$; reading of pseudo-words, $F(1, 193) = 19.84, p < .01, \eta^2 = .09$; oral reading fluency, $F(1, 193) = 31.5, p < .001, \eta^2 = .14$; reading comprehension, $F(1, 193) = 14.7, p < .001, \eta^2 = .12$; phonological awareness, $F(1, 193) = 26.2, p < .001, \eta^2 = .12$; and dictation, $F(1, 193) = 23.9, p < .001, \eta^2 = .11$. On the other hand, no significant differences were found between the groups in knowledge of letter sounds, $F(1, 193) = 1.84, p = .17, \eta^2 = .009$. In a second analysis on the “oral comprehension” sub-test, no statistically significant differences were found, $F(1, 198) = 1.79, p = .18, \eta^2 = .009$.

Finally, percentiles were calculated for each of the sub-tests making up Factors I and II of the EGRA for 1st and 2nd graders. Tables 5-6 include the percentiles and number of participants that contributed to the normative estimates of each of the EGRA sub-tests.

To correctly use these tables, the examiner should select the table corresponding to the grade, find the direct score obtained by the student in each of the EGRA sub-tests and then check the corresponding percentile (the left side of the tables).

Discussion

The main objective of this study was to analyze the internal structure of the Spanish adaptation of the EGRA (*Early Grade Reading Assessment*), its validity and the normative data obtained from the Spanish first cycle primary school population. In the analysis of the principal components it may be seen that the different sub-tests making up the instrument are grouped into two main factors, defined as “decoding and comprehension” and “oral comprehension” respectively. According to Rius (1987), in order for the child to learn to read, two basic dimensions must have developed: oral language and the acquisition of the alphabet code. Clearly oral and written languages are closely related, and both are necessary in order for children to gradually and correctly learn to read.

Table 3
Averages and standard deviations for each of the EGRA sub-tests based on the at risk DEAL situation in 1st grade of Primary school

	NOT AT RISK (N = 125)		AT RISK (N = 68)	
	M	DT	M	DT
Knowledge of letter sounds	14.34	8.42	7.51	7.36
Reading of familiar words	16.83	13.21	6.67	9.76
Reading of pseudo-words	10.26	9.52	4.55	9.49
Oral reading fluency	19.98	19.47	6.94	11.28
Reading comprehension	2.00	1.51	.86	.84
Phonological awareness	12.36	5.05	7.48	5.15
Oral comprehension	3.15	1.29	2.70	1.17
Dictation	4.37	3.49	1.70	2.28

Table 4
Averages and standard deviations for each of the EGRA sub-tests based on the at risk DEAL situation in 2nd grade of Primary school

	NOT AT RISK (N = 146)		AT RISK (N = 61)	
	M	DT	M	DT
Knowledge of letter sounds	20.37	11.16	17.15	11.20
Reading of familiar words	40.64	11.49	30.05	17.15
Reading of pseudo-words	28.10	9.47	19.92	12.36
Oral reading fluency	54.79	14.67	38.55	22.71
Reading comprehension	3.79	1.32	2.93	1.64
Phonological awareness	16.08	3.07	12.95	4.29
Oral comprehension	3.16	1.17	2.92	1.25
Dictation	11.86	4.99	7.83	4.47

Table 5
Scales of the EGRA (Early Grade Reading Assessment) – 1st trimester 1st grade of primary school

		Knowledge of letter sounds	Reading of familiar words	Reading of pseudo-words	Fluency of oral reading	Reading comprehension	Phonological awareness	Oral comprehension	Dictation
N	Valid	196	196	196	196	163	196	194	196
	Lost	0	0	0	0	33	0	2	0
Percentiles	25	5	2	0	1	0	6	2	1
	50	11	10	5	9	1	12	3	3
	75	18	21	14	22	3	15	4	5

Table 6
Scales of the EGRA (Early Grade Reading Assessment) – 1st trimester 2nd grade of primary school

		Knowledge of letter sounds	Reading of familiar words	Reading of pseudo-words	Fluency of oral reading	Reading comprehension	Phonological awareness	Oral comprehension	Dictation
N	Valid	201	201	201	200	196	201	201	201
	Lost	0	0	0	1	5	0	0	0
Percentiles	25	12	30	21	42	3	13	2	7
	50	18	42	27	61	4	16	3	11
	75	25	49	33	64	5	18	4	15

It should be noted that in the analyses conducted, the skills of fluent reading and comprehension and, to a lesser extent, those related to writing, define the nature of the first factor. This coincides with the theoretical formulations of the “simple reading model” (Gough, 1996), which considered reading fluency, speed and comprehension as main factors making up the model (Sprenger-Charolles, Siegel, Bechenec, & Serniclaes, 2003). In fact, reading fluency is one of the main predictors of reading and comprehension performance (Fuchs et al., 2001). Like the reading of pseudo-words, requiring PGC and in which phonological conscience intervenes, it is intimately related to reading. So much that in Spanish, being a transparent language, once a child learns the rules of PGC, they can read any word. Later, if they also have a good vocabulary and read with a good deal of fluency, they can be considered a reader (although perhaps they do not have the most advanced comprehension strategies).

The subtests that are included in both factors identified in the EGRA are directly related to the components described by the NRP (i.e., phonological awareness, alphabetic knowledge, vocabulary, fluency, comprehension).

Reading disabilities in at risk children tend to worsen from first to second grade unless there is early identification and intervention. In first grade, it is seen that there is considerable variability in student performance on the majority of the measured skills. This variability is expected in the first grade of primary school, especially when fluency measures are being taken. However, an exception occurs in the knowledge of letter sounds and in phonological awareness. These measures would be more appropriate for early detection, and studies in Spanish have revealed the positive influence of these skills in reading acquisition (Jiménez & Ortiz, 1995, 2000; Serrano et al., 2005). On the other hand, we can see that lexical skills begin to be more relevant as of 2nd grade of primary school.

In the second grade at risk group, all of the scores, except for those on oral comprehension tasks and knowledge of letter sounds, were found to be below or equal to the 25th percentile. Therefore,

it is possible to value the suitability of the EGRA instrument when determining the changes occurring in children during the reading acquisition process.

In this context, the use of the EGRA is appropriate when the objective is the early identification of potential student difficulties during this learning process. Currently, it is an instrument used for the early detection of students having possible DEAL in the Autonomous Community of the Canary Islands (Artiles & Jiménez, 2011). On the other hand, it has been possible to demonstrate that children who are identified as being “at risk” based on the *Hong Kong Specific Learning Difficulties Behavior Checklist*, independent of the EGRA, based on their teacher’s criteria, have greater deficits in the development of decoding and comprehension skills, both oral as well as written, measured by the EGRA, with the exception of those in second grade in which letter sound skills and oral comprehension in at risk students appears not to be as critical.

In any case, results suggest that regularity of writing, even in at risk children, leads to a command of letter sounds. On the other hand, oral comprehension is not a specific characteristic of all children with DEAL, only in those that also suffer from specific language disorders.

Finally, it should be noted that the EGRA is an assessment instrument that should not be used as a sole measure in the early identification process of reading disorders. It is clear that in this type of learning, other personal variables are of influence (i.e., motivation, personality, etc.) as well as contextual factors (i.e., social, emotional, cultural, family). Therefore, the overall assessment should be complemented, as much as possible, with the complete assessment of these other personal and contextual factors that surround the child and may influence their learning. One limitation of this study that may affect the generalization of its results lies in the fact that the normative data was not extracted from a sample that is representative of the entire Spanish school population, but rather, of only one Autonomous Community.

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