

IDENTIFICATION OF STUDENTS AT RISK IN READING, WRITING AND GRAMMAR: A STUDY WITH STUDENTS FROM 3RD AND 4TH GRADES IN NORTHERN PORTUGAL

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Abstract

The promotion of reading and writing has been a constant concern of the Portuguese government, through the financing of measures and projects for this purpose. In this context, the project «Promote Reading and Writing» has been developed since 2018, being implemented in 11 groups of schools in the Intermunicipal Community of Terras de Trás-os-Montes, with the aim of training educators and teachers of these groups, with a view to improving the teaching-learning practices of reading and writing with children in the beginning of formal learning, promoting the development of these skills. Thus, the objective on which this work is based emerges: early detection of reading and writing problems and, subsequently, developing a differentiated pedagogical action, able to promote the educational success of all students. This communication presents the results of a universal tracking carried out at an early stage of the 2020/2021 school year, with students from the 3rd (N=546) and 4th grades (N=610) of schooling in the 11 groups schools, to detect students at risk in reading, writing and grammar. To carry out this tracking, the “Know, Act and Change” (CAM) – Version 3 (2020) tests were used as a data collection instrument. The tracking was carried out by the teachers of each class, after prior training for administering the tests. Regarding the results, it was possible to observe that, in the 3rd grade, the data pointed to a risk situation in at least one of the areas involved in reading by 58.06% of the students and, in the 4th grade, this percentage was of 53.28%. It was observed that reading fluency was the competence in which the results obtained reveal the highest percentage of students at risk (36.26% and 35.90%, respectively), followed by the comprehension of listened texts (35.71% and 25.41%, respectively) and the understanding of texts read (21.25% and 19.34%, respectively). In writing, the data collected point to a risk situation of 48.35% of 3rd grade students and 41.15% of 4th grade students. This risk was mainly verified in the dictation of words component. The results referring to grammar indicated as being at risk 50.18% of the 3rd grade students and 48.36% of the 4th grade students. Therefore, it was concluded that: (i) More than half of 3rd and 4th grade students were reported to be at risk in at least one of the reading skills (mainly fluency); (ii) Less than half of the 3rd and 4th grade students evaluated obtained results that point to a risky situation in writing (especially in word dictation); (iii) Half of the 3rd grade students and almost half of the 4th grade students also obtained results that put them at risk in grammar. In the analysis of the results, we cannot ignore the fact that students who were assessed in the 3rd and 4th grades had been, in the previous academic year, part of the 2nd academic period without classes and the entire 3rd period in the distance learning modality, because of the COVID-19 pandemic which, since March 2020, has caused strong constraints in Portuguese schools. Furthermore, the purpose of this tracking was not just to make a diagnosis, but above all to understand, at an early stage of the school year, which skills are even less developed and which students may be experiencing greater difficulties, seeking to support an action pedagogical aimed at learning and developing these same skills.

Keywords: Reading, writing, grammar, risk, reading risk, writing risk.

1 INTRODUCTION

There is a generalized consensus regarding the relevance of learning to read and write in the life of any citizen. We live in a digital society of information and knowledge where mastering to read and write is absolutely crucial and we recognize school as the institution of excellence for writing and promoter of contact with the universe of written texts. Reading and writing skills are fundamental in learning and must be associated with processes of constitution and construction of learning communities [1]. These two skills are transversal to all areas in learning and, therefore, take a structuring role in students' educational success and, consequently, in the construction of essential literacies to form citizens who are included and committed to life in society.

It is worth reminding that reading and writing are complex processes and their learning lacks an explicit teaching. With “reading”, reiterating the positioning of the reader as text constructor (in the sense that it is he who gives life to the text), we can understand that an interactive process is established between the reader and the text, where the former seizes and rebuilds the meaning or meanings of the latter. It is considered that Reading involves two major skills: deciphering and comprehension. Actually, understood as a process, it develops itself in a joint action of capacities and actions of the reader subject, ranging from the deciphering of graphemic sequences, passing through the access to semantic information, the construction of knowledge about itself and the world and are embodied in a personal, critical and creative response to the text itself. Writing also stems from a highly complex learning. Writing involves several components that range from planning, through textualization and review, until a process of textual editing is reached. Therefore, writing is understood as “a process of linguistic fixation that calls for knowledge of the adopted graphic representation system, as well as complex cognitive and translinguistic processes (planning, textualization, revision, correction and reformulation of the text)” [2, p. 6]. When, from a pedagogical perspective we talk about writing, it is important to recognize that it can be considered a process as well as a result of that process [3]. In terms of pedagogical activities for the development of students’ writing skills, it is about the process that matters most, promoting a shared writing pedagogy.

Learning to read and write, being a fundamental objective of basic education, begins long before entering formal schooling contexts and is related to a large number of other skills, of which phonological skills stand out. In this context, we will revisit the relationship with phonological awareness, lexical awareness and, finally, consider all this reflection in the light of Literary Education.

The existence of a strong predictive relationship between the development of children's phonological competence (particularly at the beginning of basic schooling) and their success in learning to read and write is well documented. This implies recognizing phonological competence as an initial and fundamental focus for the development of reading and writing skills. By phonological awareness is meant “the ability to explicitly identify and manipulate the units of the oral” [4, p. 11]. This ability, therefore, refers to the oral use of language and to the development of skills to recognize and identify phonological units, at a first level, and to manipulate these phonological units, developing the ability to operate with speech sounds.

The scientific literature in the area is very clear in the postulation of the importance of developing this capacity, working it with children, from the educational contexts of early childhood education [5-9]. The development of phonological awareness implies that the child will be able to consciously recognize and analyze the sounds (and the sound system) of the language they hear and speak. Playing with the language, the child develops the ability, in a speech continuum, to identify phonological units, such as the syllable. Indeed, the syllable is the phonological unit most easily recognized by children. But the progressive development of phonological awareness implies the discovery of smaller “bits of sounds” (within words), such as intrasyllabic constituents and phonemes. Therefore, it is important to mention that phonological awareness is subdivided into three types: (i) Syllabic awareness – ability to isolate, identify and manipulate syllables; (ii) Intrasyllabic awareness – ability to isolate, identify and manipulate units within a syllable; (iii) Phonological or segmental awareness – ability to isolate, identify and manipulate phonemes, each of the speech sounds.

Another competence that is important to consider in the development of the reading and writing acquisition is lexical competence (note that the tests we use include “word dictation”). It is important to remember that the lexicon is an organized and dynamic mental domain and not an arbitrary listing of words that exist outside the mind. Since language is a cognitive faculty, all its structures exist in the mind and that is where they are developed [10]. The development of this competence (which is related to the knowledge of the lexicon) is fundamental, since it is recognized that a “deficient lexical collection of our students influences, in a negative way, their cognitive development, their personal maturation and compromises their integration into an increasingly complex, more demanding, more cultured and diverse society” [11, p. 367]. On the contrary, a good development of lexical competence is fundamental for the development of reading fluency – first of all because a student reads a word he knows more easily than another that is completely new to him. By reading more fluently, there is a greater willingness to understand the text, thus having consequences in the development of macrotexual comprehension competence. A student who reads fluently, and who understands what they read, will feel more pleasure in reading and will read more. Reading more broadens their knowledge of the world and its lexical capital, which reinvests in communicational practices and reading practices.

A circle of benefits is thus created in the sense that a child with a greater lexical field will have, through familiarity with the words of the language, greater competence in terms of reading fluency, which, in

principle, results in a greater willingness to invest in textual comprehension processes. In this line, Viana and Ribeiro [12] emphasize the relationship between vocabulary and decoding, for reading comprehension. If the words to be decoded are already part of the passive and active lexicon of individuals, they quickly manage to associate the orthographic pattern with the phonological pattern, continuing their reading with more speed and fluency. By understanding more deeply the texts they read, the child will have greater pleasure in reading and will read more often, with progressive autonomy and critical sense. By reading more, the more their knowledge of the lexicon will develop, which means the more your lexical capital (active and passive) will expand, which, as mentioned, will be a favorable condition for the development of reading skills, within the scope of fluency and comprehension. This is a virtuous circle that must be promoted in all contexts of learning and development.

The development of reading and writing skills must consider the children's contact with the literary text, because this is a universe of a composite nature that relates the different areas of life and knowledge, presenting an imaginative vision of the world and showing a unique and creative relationship with language. The Domain of Literary Education is, as is known, contained in the Essential Learning [13], approved by Order No. 6944-A/2018, of 19 July. In a very forceful way, we can say that Literary Education can transform people into competent readers. The promotion of literary education is a major challenge for today's school [14]. In this context of Literary Education, in the aforementioned Essential Learning [13], for the 4th grade of basic education it is postulated that:

In the field of literary education, it is intended that students become familiar with and have daily contact with literature of reference, from which they will be able to develop appreciation skills. Making reading a pleasure and a habit for life and finding in books motivation to read and continue to learn depend on rewarding reading experiences, to be developed from the diversified resources and strategies that the National Reading Plan (NLP) makes available, and guided paths of analysis and interpretation. Specifically in the implementation of guided reading strategies, this domain opens the possibility of convergence of activities of orality, reading, writing and reflection on the language, since, being the object of the literary text, it reflects procedures of comprehension, analysis, inference, writing and specific uses of language. (p.3)

The Program and Curriculum Goals of Portuguese for Basic Education [15] also reiterates the importance of Literary Education, stating that it “comes to give more consistency and meaning to language teaching, strengthening the curricular association of the formation of readers with the cultural matrix and citizenship” [15, p. 8].

Literary Education, in general, and the promotion of reading and writing, in particular, can significantly benefit from the use of information and communication technologies and, more specifically, digital educational technologies. However, despite the recognition of the opportunities that digital technologies create for learning and, inherent to the curriculum, (formal) education seems to continue to be analogical [16]. We are aware of this reality, but we are confident that the various intervention projects in this area can contribute to studying and improving this situation.

In Portugal, the current Legal Regime for Inclusive Education [17] (DL 54/2018 of 6 July, with the changes introduced by Law N° 116/2019 of 13th of September, which involve the implementation of a multilevel approach and a “proactive and preventive action, oriented towards the promotion of skills and the development of learning... with a focus on interventions of a universal nature, aimed at all and under the responsibility of all” [18, p. 19]. At first, a set of measures emerges - the universal measures - which consist of a “set of educational responses that the school has for all students with the aim of promoting participation and the improvement of learning” [18, p. 29] and in the context of which there is a need to avoid possible difficulties, as well as to detect students at risk and to define priority areas of intervention for all.

Thus, in this context, the intervention project “Promoting reading and writing” has been implemented since 2018, involving the 11 school groups of the Intermunicipal Community of Terras de Trás-os-Montes (CIM-TTM), which aims to train educators and teachers in these groups, with a view to improving educational practices for teaching and learning to read and write with children at the beginning of formal learning, promoting the development of these skills, with consequences in their school success. Within this purpose, the following objective emerges, among others, on which the work presented in this article is based: to detect early reading and writing problems and, later, to develop a differentiated pedagogical action, using digital technologies as appropriate, to promote the educational success of all students. The development of the project has always been based on a logic of promoting literary reading, working with teachers in pedagogical activities that enhance the knowledge and the understanding of the rich universe of literature for children.

2 METHODOLOGY

2.1 Population

In the 2020/2021 school year, students from the 1st to the 4th grade of schooling (1st Cycle of Basic Education) from eleven groups of schools in the northern region of Portugal participated in this project. The data presented here refer to 3rd and 4th grade students. There are 546 students in the 3rd year and 610 students in the 4th year of schooling. It should be noted that all students who participated in the project had authorization from their parents or guardians.

2.2 Data collection tool

The Conhecer, Atuar e Mudar (CAM) – Version 3 (2020) tests took on the role of screening tests in the Project “Promover a Leitura e a Escrita (PLE)”, being used as a data collection tool in the different years of schooling involved in the project.

In the 3rd grade [19] and in the 4th grade [20] these tests assess the same skills, through six tests: listening comprehension test, grammar test, reading comprehension test, dictation test words, writing fluency test, reading fluency test.

Risk in reading was found based on the results of students in terms of listening comprehension skills, reading comprehension and reading fluency. To detect risk in writing, writing fluency and word dictation were evaluated.

These tests are collective and can take up to a maximum of one morning, and the correction/grading is carried out by the teacher afterwards.

According to the authors of these tests, they “respond to one of the main requirements of multilevel models [17] (Decree-Law 54, of 6th July 2018), that is, the timely identification of students “at risk”, in order to organize a preventive response” (p. 3). It is important to mention that the results of these tests do not place the students on a performance scale because that is not their objective. But they allow the classification of students “at risk” vs “not at risk”, based on a cut-off point. To circumvent the possibility of detecting false positives or false negatives (a characteristic of these and other screening tests) it is important that the results are confirmed by teachers based on their knowledge of their students.

2.3 Data collection and analysis procedures

In the context of the data collection process, it is important to consider three different moments concerning it: (i) Training of teachers for the administration of tests; (ii) Administration of tests in the classroom, correction and insertion of results in an online platform; (iii) Analysis of results.

The administration of the tests was carried out by the teachers of each class (teacher of the class with the collaboration of the support teacher) at an early stage of the 2020/2021 school year and took approximately one morning. However, it should be noted that these teachers were previously trained to administer the tests, having participated in advance in a webinar with a view to this same training and, when necessary, in sessions to clarify doubts. Most of the teachers had already completed the training in previous academic years in the context of the same project.

After taking the tests, each teacher entered the answers of their students in an online platform for learning, sharing and collaboration, intended for this purpose and which later provided them with a report with all the results of the students in their class.

In addition to the results per class, the technical team of this project (formed by the three authors of this article) accessed, for its analysis and reflection, the global results of the 11 groupings, regarding the existence or not of risk in the different skills evaluated, which is data that results from previous statistical analysis, more specifically using descriptive statistics.

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3 RESULTS

The results of the students in the CAM Tests are presented below, based on the risk evidenced in reading, writing and grammar.

3.1 Results for risk in reading

In the 3rd grade, out of the 546 students evaluated, 41.94% (n=229) did not present any risk in this competence. The remaining 58.06% (n=317) are at risk in at least one of the areas involved in the reading assessment.

Tables 1 and 2 present the results regarding the percentage and number of students in the 3rd and 4th grades, respectively, at risk in reading (comprehension of the text heard, comprehension of the text read, reading fluency).

Looking at Table 1, it is in reading fluency that more students are at risk, followed by comprehension of texts heard (with a very close percentage) and then comprehension of texts read. When there is a risk simultaneously in more than one competence, this happens mainly in the comprehension of texts heard (CTO) simultaneously with the fluency of reading (FL), followed by the comprehension of texts read (CTL) with the FL (both situations with a risk percentage greater than 15%). With lower percentages (between 10% and 14%) there are students at risk in both the CTO and CTL and students at risk in all these skills.

Table 1. Risk in reading in the 3rd grade

<i>CTO</i>	<i>CTL</i>	<i>FL</i>	<i>CTO+FL</i>	<i>CTO+CTL</i>	<i>CTL+FL</i>	<i>CTO+CTL+FL</i>
35.71% (n=195)	21.25% (n=116)	36.26% (n=198)	16.30% (n=89)	13.19% (n=72)	15.75% (n=86)	10.07% (n=55)

Caption: CTO-Comprehension of texts heard; CTL-Comprehension of texts read; FL-Reading Fluency

In the 4th grade, out of the 610 students evaluated, 46.72% (n=285) are not at risk in reading and the remaining 53.28% (n=325) are at risk in at least one of the areas involved in this assessment. Looking at Table 2, it is in reading fluency that there is a higher percentage of students at risk, followed by comprehension of texts heard and comprehension of texts read.

Table 2. Risk in reading in the 4th grade

<i>CTO</i>	<i>CTL</i>	<i>FL</i>	<i>CTO+FL</i>	<i>CTO+CTL</i>	<i>CTL+FL</i>	<i>CTO+CTL+FL</i>
25.41% (n=155)	19.34% (n=118)	35.90% (n=219)	12.13% (n=74)	10.16% (n=62)	12.62% (n=77)	7.54% (n=46)

Caption: CTO-Comprehension of texts heard; CTL-Comprehension of texts read; FL-Reading Fluency

3.2 Results for risk in writing

In the 3rd grade, out of the 546 students evaluated, 51.65% (n=282) did not present risk in this competence, with the remaining 48.35% (n=264) at risk in this competence. In the 4th grade, out of the 610 students evaluated, 58.85% (n=359) are not at risk in any of the evaluated writing areas and 41.15% (n=251) are at risk in at least one of the writing skills. writing.

Tables 3 and 4 show the results (percentage and number) for writing (writing fluency, word dictation), for 3rd and 4th grade students, respectively, who are at risk. Looking at Table 3, it is in the dictation of words that the highest percentage of students at risk are found.

Table 3. Risk in writing in the 3rd grade

<i>FE</i>	<i>DP</i>	<i>FE + DP</i>
21.79% (n=119)	42.49% (n=232)	15.93% (n=87)

Caption: FE-Writing Fluency; DP-Word Dictation

Like what happens in the 3rd grade, in the 4th grade there is also (see Table 4) a higher percentage of students at risk in word dictation, although it is a lower value than in the 3rd grade and very close to the percentage of students at risk in writing fluency.

Table 4. Risk in writing in the 4th grade

<i>FE</i>	<i>DP</i>	<i>FE + DP</i>
25.41% (n=155)	27.54% (n=168)	11.80% (n=72)

Caption: FE-Writing Fluency; DP-Word Dictation

3.3 Results for risk in grammar

Tables 5 and 6 show the results for grammar risk (percentage and number of students) for 3rd and 4th grade students, respectively. Out of the 546 students evaluated in the 3rd grade, practically half are at risk in grammar.

Table 5. Risk in grammar in the 3rd grade

<i>At risk</i>	<i>Not at risk</i>
50.18% (n=274)	49.82% (n=272)

In the 4th grade, out of the 610 students evaluated, it is observed that, in statistical terms, most students do not present a risk in reading, but the truth is that the difference in comparison to the percentage of students at risk is small (3.28 %). In other words, in practice, almost half of the students assessed are at risk in grammar, similarly to what happens in the 3rd year of schooling.

Table 6. Risk in grammar in the 4th grade

<i>At risk</i>	<i>Not at risk</i>
48.36% (n=295)	51.64% (n=315)

It is worth recalling that these data were collected through the application of the aforementioned tests. However, within the scope of the training actions developed in this project, the data were always treated in a dynamic relationship with the teachers' perceptions and conceptions in relation to their classes. This interaction between the technical team and the professionals who work in the different contexts of education is highlighted as a fundamental asset.

3.4 Considerations on the incentive to use digital technologies

This project is also an opportunity to emphasize the concrete work in terms of promoting reading and writing, reinforcing the training of the teachers involved in the use of digital technologies (including in the context of distance learning), more specifically of applications of free access which, due to their characteristics, can also promote motivation and a taste for reading and writing.

The knowledge and use of online applications to promote textual understanding; the knowledge and use of online applications for reading or writing and illustrating stories and the dissemination and application of educational assessment technologies for learning to read and write were the main digital technologies explored in the training and qualification actions.

In the various training actions or training sessions, particular attention was given to the use of programs that, being easily accessible and simple in terms of usability, could enhance the development of reading and writing activities. Some examples of these programs were *Storyjumper.com* and *Vizia.co* or *PlayPosit-Interactive Videos*. It should be noted that the teachers showed great interest in using these tools in their classes, both during distance learning and in face-to-face teaching. Receiving examples of the use of these tools, sent by teachers from the different groups, was good evidence that the work developed in the training sessions reached the real pedagogical contexts, which was very important and gratifying.

4 CONCLUSIONS

The results obtained allow us to draw different conclusions.

More than half of the students in the 3rd and 4th grades of schooling evaluated are at risk in reading, and this risk is mainly verified in fluency. Less than half of the 3rd and 4th grade students evaluated are at risk in writing, and this is mainly verified in word dictation. Half of the 3rd grade students and almost half of the 4th graders assessed are at risk in grammar.

In the observation and analysis of the results presented here, and the respective conclusions, we cannot be oblivious to the fact that the students who were evaluated in the 3rd and 4th grade were, respectively, in their 2nd and 3rd grades for one month at home without classes (15 days without classes and 15 days of vacation) and about 2.5 months in the distance learning modality, a situation that everyone (students, teachers and parents) was taken completely by surprise and which had never happened before. It is recalled that this situation was the result of the COVID-19 Pandemic that since March 2020 has caused strong constraints in Portuguese schools (and around the world).

It is also important to remember that the purpose of applying the tests is precisely to understand, at an early stage of the school year, which skills will be even less developed (either because they are less taught, or because they are less learned) and in which skills students may be feeling difficulties, so as to be able to start a pedagogical action directed towards the learning and development of these same competences. Note that, as mentioned by Cruz [21, p. 245], most children who in the 1st Cycle of Basic Education are “at risk of failing to read, can learn to read at a medium or higher level, if they are identified early” and if they are provided with the appropriate intervention/follow-up. As is well known, the earlier the risk is detected and the action taken to overcome this risk, the better the prognosis [21, 22]. This is where we base our interaction.

The results of each class were analyzed with the respective teacher, in order to verify if they correspond to the perception they have of their students and to understand who these students at risk in the skills assessed actually are.

It should be noted that a substantial part of the students who are at risk in reading present difficulties in the scope of fluency, showing problems in the acquisition of the deciphering competence. This data refers to several risk situations caused by the lack of reading practice/training and should be the object of reflection in the light of studies that have been pointing to the lack of reading habits of Portuguese students (see for example [23]).

The data related to the “dictation of words” were also object of reflection with the teachers of the different classes. These data can reflect a certain social devaluation (and, consequently, in the scope of educational action as well, which is not just school) of the spelling error. There is, on the other hand, a factor that may have conditioned these results and that is related to the fact that the test is carried out with a dictation of words recorded in audio. The technical conditions may not always have been the best and the pronunciation of some words (adapted to what can be considered standard Portuguese) is not always the same as that of the local linguistic community (we are talking about a region in the Northeast of Portugal). In any case, the data reveal the need for greater investment in the development of students' spelling skills.

Regarding grammar, it is important to remember, in this context, that the tests were administered at an early stage of the school year, both for the 3rd year and the 4th year of schooling and that, despite the teaching of grammar having already been started in the two previous years, in Portugal, it is mainly from the 3rd year of schooling onwards that the explicit teaching of contents referring to the grammar of the language begins to gain greater relevance in the classroom. On the other hand, the reduced number of questions that the test contains in this domain implies that the cut-off point is quite low, which means that more students are identified at risk. But the evidence brought by these data allowed us to reflect and work with the groups of teachers involved in the project on issues related to the approach to grammar, emphasizing learning through grammatical laboratories and the need for a pedagogy in which grammatical contents are systematic and consciously capitalized on reading and writing tasks.

It should be noted that, given the recent nature of the tests, and even though they are being used in similar projects in other regions of Portugal, there are still no published studies with which these results can be compared to. However, it is to be expected that soon this may be possible, constituting this article, from now on, as a document with results and conclusions to be used by other colleagues who use the same instruments in their studies.

Finally, it is important to emphasize the social impact of this study, and even more so of the project in which it is inserted, in the sense that it will allow to detect, as early as possible, emerging difficulties in reading and writing, but even more so, to intervene in close articulation between the technical team/researchers and class teachers in order to promote, also as early as possible, the overcoming of these difficulties.

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