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# The Importance of Phonological Awareness in Learning Disabilities' Prevention: Perspectives of Pre-School and Primary Teachers

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There is robust empirical evidence regarding predictors of success in reading and writing. However, pre-school and primary teachers are not always aware of this evidence and often do not know how to apply it in practice. Considering the importance of the role of these teachers and the importance of early school years in preventing learning difficulties, it is essential to study teachers' attitudes, knowledge, and strategies for improving educational processes toward successful development of literacy skills. Particularly, recognizing the impact of phonological awareness on the development of reading skills, this study has two main research questions: What is the importance pre-school and primary teachers attribute to the promotion of phonological awareness? and Which strategies for promoting phonological awareness do they apply in their professional practice? This qualitative study includes individual interviews with 10 pre-school and primary teachers, seeking to understand the perspective of each participant about phonological awareness, its importance, and implementation in practice. Data were collected in a context of great adversity (e.g., child maltreatment, early life stress). The results reveal that both pre-school and primary teachers recognized the relevance of phonological awareness among other pre-academic skills. Regarding the activities teachers implement, in their perspective, the playfulness seems to better result to stimulate this specific skill. Preschool teachers tend to focus on the dynamics that promote syllabic, intrasyllabic and phonemic awareness. Despite recognizing the gaps in phonological awareness in the first graders, primary teachers seem not to prioritize activities that stimulate and consolidate this skill, privileging the fluency and comprehension processes. The collaborative work between professionals was highlighted as very important to optimize the stimulation phonological awareness as well as facing other learning difficulties teachers find in this context. The results are discussed considering the role of pre-school teachers and primary teachers in reading difficulties' prevention in contexts facing multiple vulnerabilities.

**Keywords: phonological awareness, learning disabilities, pre-school, primary school, prevention**

# INTRODUCTION

Reading is considered essential for academic success and school progression (e.g., Lacal et al., 2018; Porta and Ramirez, 2019). For this reason, there are several authors (e.g., Alonzo et al., 2020; Ferraz et al., 2020; Lacal et al., 2018) who, over time, have been dedicated to studying the variables involved in the process of learning to read. Phonological awareness has been pointed out as one of the most significant predictors of success in this domain (e.g., Melby-Lervåg et al., 2012). In fact, there are several studies that prove the importance of phonological awareness (e.g., Newbury et al., 2020), particularly in word recognition and reading fluency and accuracy (e.g., Ferraz et al., 2020), as well as reading speed and comprehension (e.g., Memisevic et al., 2020), stressing the need for early stimulation of this meta-skill (Wanzek et al., 2019). The stimulation of phonological awareness, by facilitating the process of learning to read, prevents the development of learning disabilities (e.g., Amorim et al., 2020). Such prevention is particularly important, since learning disabilities lead to consequences not only in academic domain (e.g., dropping out of school), but also in socioemotional (e.g., low self-esteem), and behavioral dimensions (e.g., maladaptive behaviors) (e.g., Cruz, et al., 2014; Eloranta et al., 2018; Emam, 2018; Razak et al., 2018; Rodrigues et al., 2018; Skues et al., 2016; Watson et al., 2016). Thus, considering the importance attributed to the stimulation of phonological awareness, it is important to emphasize the role of pre-school and primary school teachers. This role is even more relevant with students who experience difficulties in their learning process (Didion et al., 2020; Washburn et al., 2017). According to the *Curricular Guidelines for Pre-School Education* in Portugal, one of the content areas is oral language, and it is up to pre-school teachers to stimulate phonological awareness through rhymes, nursery rhymes, tongue twisters, and riddles (Direção Geral da Educação, 2016). However, a study by Rodrigues and others (2018) identified that, despite these guidelines and the fact that phonological awareness contributes to the reading process, teachers tend to use activities that promote vocabulary and reading comprehension and speed, to the detriment of phonological awareness. In fact, educators and teachers may need some support in understanding what the requirements for learning to read are, in identifying children who have difficulty mastering these requirements, and in implementing strategies that promote and facilitate the learning process of these students (Bratsch-Hines et al., 2017). Such a need is evidenced by Alshaboul, (2018) study, which sought, in general, to explore the beliefs and knowledge of 158 undergraduate students pre-service English language teachers regarding the importance of phonological awareness. This study found that participants had low literacy in phonological awareness but had more knowledge and were more aware of the importance of reading fluency and accuracy, at the expense of phonological awareness. In fact, the future teachers do not perceive themselves as being competent in the teaching of reading, showing low scores regarding the use of activities that relate directly to the development of skills necessary for reading, such as manipulating the sounds of each word and segmenting words into phonemes. Thus, the participants in this study generally had low literacy regarding the use of pertinent methods and strategies that enable the teaching and assessment of phonological awareness. This type of result highlights the need attributed to the training of these professionals, which, in turn, influences what is each teacher's valuation of phonological awareness (Jordan et al., 2019). Thus, this exploratory study aims to explore the perceptions of valuation of pre-school and primary school teachers regarding phonological awareness in the prevention of learning disabilities.

# MATERIALS AND METHODS

The following research questions were defined:

1) What importance do pre-school and primary school teachers attach to the promotion of phonological awareness?
2) What are the main strategies adopted by pre-school and primary school teachers to promote phonological awareness?

## Participants

Five pre-school teachers and five primary school teachers participated in this study (N = 10), whose characterization is presented in **Table 1**.

The participants integrate one Portuguese school included in the Priority Intervention Educational Territories Program (TEIP), warded by the Ministry of Education. The schools that integrate the TEIP Program evidence high levels of school failure and early school dropout.

## Instruments

**Script for semi-structured interview "*The importance of phonological awareness in the prevention of learning disabilities: Perspectives of pre-school teachers*" (Pontes et al., 2020).**

This script covers four dimensions: 1) socio-professional data; 2) valuation of the stimulation of phonological awareness; 3) strategies used to stimulate phonological awareness; and, 4) receptivity, importance, and perception of early childhood educators regarding phonological awareness stimulation programs.

**Script for semi-structured interview "*From learning disabilities in reading to intervention: primary school teachers' perspectives*" (Miranda et al., 2020).**

This script covers five dimensions: 1) socio-professional data; 2) teachers' perception of students' learning disabilities in reading in the early years of schooling; 3) teachers' sense of self-efficacy in addressing students' learning disabilities in reading in the early years of schooling; 4) strategies used at the level of learning disabilities in reading; and finally, 5) teacher training.

## Data Collection Procedures

The study obtained approval in the Scientific Council of the Faculty considering all ethical issues related to research with human subjects. Subsequently, a request was made to the

**TABLE 1 |** Characterization of the participants.

| Participant | Sex | Educator type | Grade of teaching | Years of teaching experience |
|---|---|---|---|---|
| T1 | Female | Teacher | 2nd grade | 3 years |
| T2 | Female | Teacher | 1st grade | 1 year |
| T3 | Female | Teacher | 1st grade | 1 year |
| T4 | Female | Teacher | 3rd grade | 3 years |
| T5 | Male | Teacher | 4th grade | 1 year |
| P6 | Female | Pre-school Teacher | 3, 4 and 5 years | 24 years |
| P7 | Female | Pre-school Teacher | 3, 4 and 5 years | 27 years |
| P8 | Female | Pre-school Teacher | 3, 4 and 5 years | 21 years |
| P9 | Female | Pre-school Teacher | 3, 4 and 5 years | 1 month |
| P10 | Female | Pre-school Teacher | 3, 4 and 5 years | 13 years |

T = teacher; P = pre-school teacher.

Direction of the school context in which the participants carried out their professional activity, to obtain authorization to carry out the study. The research team contacted pre-school teachers and teachers, trying to identify potential participants. After authorization, each participant was contacted via email, with the objective of scheduling the interviews at a time that was most convenient. To ensure ethical and deontological issues, informed consents were obtained from the participants. The participants were previously informed about the objectives of the study, and data confidentiality was ensured, delimiting the use of the information collected only for research purposes. Considering the pandemic situation per COVID-19, only three of the ten interviews were conducted face-to-face, while the rest were conducted online through digital platforms (e.g., *Zoom*, *Meet*, *Skype*). Data collection took place on an individual basis, between June and July 2020 and, with due consent from the participants, the interviews were recorded in audio format.

## Data Analysis Procedure

The data analysis went through different stages: pre-analysis, material exploration and data processing, and interpretation (Bazeley and Jackson, 2013). In a first moment, all the interviews were transcribed, and then we proceeded to a fluctuating reading of the interviews to obtain general information about the phenomenon under study. Afterwards, a process of creation of common tree node, and subsequent coding and content analysis was initiated using NVIVO software (version 12). This data analysis process followed a semi-inductive logic (Saldaña, 2013), in which the system of categories evolved according to the dimensions previously established in the interview guide, and other categories emerged from the data.

In addition to the definition of categories aligned with the interview guides, other methodological procedures were followed to guarantee the internal reliability of the coding and analysis processes (Gonçalves et al., 2021). Firstly, the 10 interviews were coded and to achieve consistency in the analysis, a second coding was performed 3 months later and compared to the first coding version. Also, the researcher responsible for the coding of systematically comparing the transcripts with the recordings as well as to verify the content analysis and conclusions drawn from the transcripts.

## RESULTS AND DISCUSSION

What importance do pre-school and primary school teachers attach to the promotion of phonological awareness?

Among the various pre-academic skills, phonological awareness is the one that educators highlight as crucial for learning to read and write, considering it a factor that "*it will contribute in some way to the success of those children. And when I say success, I mean success at school, success as a person, because if they succeed at school, they will be happier*" (P6). The valorization of the stimulation of phonological awareness is also associated with "*professional experience and to listen to other professionals*" (P8) and to the "*Pre-School Curricular Guidelines*" received by the authority, which "*end up pointing a little in this direction as well*" (P7). Teachers corroborate this perception, stating that the most frequent manifestations of students' reading difficulties are related to deficits in phonological awareness, highlighting that "[the students] *cannot associate the letter with the sound, the phonetic part, the sound is where they have more difficulty*" (T3). In addition, teachers report that as a result, students tend to have spelled reading and letter inversion, which often translates into reading comprehension deficits, and reading fluency deficits: "*. . . and of course the level of interpretation, of what he read, also ended up being a little compromised*" (T5).

In fact, empirical evidence shows that phonological awareness is one of the most influential variables in the acquisition of reading skills (e.g., Alonzo et al., 2020; Gutiérrez, 2017; Lacal et al., 2018), and that it is therefore crucial to stimulate during the pre-school age (Jiménez et al., 2009; Anthony & Francis, 2005). The difficulties identified by teachers in the process of their students learning to read are in line with the literature (e.g., Alonzo et al., 2020; Lacal et al., 2018), in that they emphasize phonological awareness for the success and development of reading. According to Hayward et al. (2017), students tend to exhibit several errors in phonological awareness, such as adding letters at the beginning, middle, and/or end of the word, omitting phonemes, repeating phonemes, reversing the order of phonemes, as well as substituting a letter or phonemes in a word. Considering that there is an interdependent relationship between decoding ability and comprehension, it would be expected that teachers would report these difficulties at the reading comprehension level, since children who have

difficulty reading words also have difficulty understanding written texts (Ribeiro et al., 2016).

According to teachers' perceptions, the factors that justify deficits in phonological awareness may be varied, namely associated with family characteristics. Teachers recognize that the absence of parental support influences the reading process, leading to increased challenges and difficulties: "*(. . .) then there are also other issues at the level of family support that is also important*" (T5). From the point of view of the family context, the teachers' perceptions converge on the importance of parental support in the process of acquiring the various skills, and according to the literature, the absence of stimulation opportunities in the early years, associated with poor parental involvement, may contribute to the development of reading difficulties (Battin-Pearson et al., 2000; Chiu and McBride-Chang, 2006; Corso and Meggiato, 2019; Moura et al., 2019; Nicolau and Navas, 2015; Rech and Miranda, 2018; Rosa, 2019). These findings are very relevant considering the importance of systemic approach to learning problems. Teachers, based on their professional experience, verify the importance of parental involvement considering that it plays an important role in the development of children's emergent literacy (Esmaeeli et al., 2019).

Regarding the various weaknesses that specific learning disabilities in reading can bring about, teachers highlight low academic performance, low school motivation, low self-esteem and low self-efficacy: "*unfortunately we have students who have a lot of disabilities, and this makes learning in other areas difficult as well. . . If they don't master reading, they will have difficulties in the other areas.*" (T4); "*The fact that they learn to read is a pride for them and their self-esteem goes up, their well-being, everything.*" (T4). The comprehensibility of the factors underlying the disabilities associated with learning to read and the consequent perceived impact on socioemotional and academic levels are in line with the literature. In fact, as previously mentioned, reading is crucial for students to experience academic success and for the learning of other school contents to occur (Khalid et al., 2017). Therefore, it is also consistent with evidences that reading disabilities directly affect the socioemotional level. Thus, recurrent and ongoing learning disabilities in reading can contribute to a loss of interest in school, a sense of frustration, and can consequently lead to behavioral problems, social isolation, depressive and anxiety symptoms (e.g., Cruz, et al., 2014; Emam, 2018; Razak et al., 2018; Rodrigues et al., 2018; Skues et al., 2016; Watson et al., 2016). This is why it is essential to prevent learning difficulties through an early, universal and systematic perspective. Pre-school primary school teachers play a determinant role in this process.

## Main Strategies Adopted by Pre-School and Primary School Teachers to Promote Phonological Awareness

According to their daily practices, the pre-school teachers highlight diverse phonological awareness stimulation activities that aim to stimulate different types of phonological awareness, namely syllabic, intrasyllabic, and phonemic awareness.

According to the practices shared by the pre-school teachers, it was found that there were more strategies for stimulating syllabic awareness and intrasyllabic awareness, and subsequently, strategies for stimulating phonemic awareness were the least mentioned. In fact, studies indicate that the stimulation of phonological awareness should occur gradually, that is, it should start from larger phonological units to the level of smaller phonological units (Freitas et al., 2007; Rios, 2013).

Furthermore, teachers refer that they use story reading, rhymes, exploration of the environment, or specific materials to stimulate phonological awareness:

"They like stories a lot, we also tell a lot of stories, and then we try to explore at the level of sounds" (P7); "*I'm doing a world knowledge thing and that word I have there I can. . .ah. . .for example, we do endless syllabic division sessions*" (P10); "*On the rhyming blanket, with their names, rhymes with their mothers' names, rhymes with objects in the room*" (P8); "*We are going to make the sound box/f/and we are always looking for words with/f/, like/f/, father and go the image of the father or go the real object if it is possible*" (P6).

Besides the daily dynamics, some participants refer that they implement specific phonological awareness stimulation programs: "*In the "A Ler Vamos" and "Matiga" projects it is assumed that it is the kindergarten teacher who develops, but alongside and at the same time*" (P6). In this dynamic process of planning regular and intentional activities to stimulate phonological awareness, the participants highlight the increasing role of technological resources as a facilitator to engage children through games or other playful activities "*meeting interests and tastes*" (P7). One of the teachers even mention that this playful character is important in that "*the goals are achieved; they continue to play without realizing that they are already achieving what we want*" (P7).

In line and continuity with the methodologies and strategies used by the pre-school teachers, the teachers also tend to favor play, such as games, images, songs, and videos, in order not only to promote the acquisition and consolidation of the reading processes, but above all, to motivate students to learn. Thus, focusing on reading fluency, teachers tend to use activities that involve reading single words, reading simple sentences, and reading texts. Associated with the reading of texts to stimulate reading fluency, there are moments of exploration of the texts, in order to promote the students' reading comprehension. Despite the recognition of the cross-sectional gaps in phonological awareness among primary school students, teachers do not seem to prioritize in their planning activities to stimulate and consolidate this pre-academic competence, focusing more on letter identification and differentiation between vowels and consonants.

The stimulation of phonological awareness through games and play constitutes a motivator for the learning process (Cotonhoto et al., 2019). As mentioned above, students with specific learning disabilities in reading tend to be commonly unmotivated to learn (Rech and Skues et al., 2016; Miranda, 2018; Rodrigues et al., 2018). Thus, it is essential to enhance their motivation through playful activities (Rodrigues et al., 2018). These assume a high importance not only in the learning process,

but also in the development from the social and emotional point of view, which is why they have been gaining prominence in the school context to facilitate the development of skills and learning. The use of playful materials, such as games and songs, resources used by the participants, can contribute significantly to the process of stimulating phonological awareness in students, reducing reading difficulties (e.g., Cotonhoto et al., 2019; Júnior and Alencar, 2020).

The narratives of the pre-school and primary school teachers also reflect the need to develop collaborative work in promoting phonological awareness and preventing learning disabilities, with the support of other professionals:

"*This ends up being a job, it may not seem like it because I'm alone in the classroom or I'm with the support colleague, but mostly I'm alone with them, but it's still a team effort.*" (T1); "*I always prefer to work as a team.*" (T2).

Research indicates that the years of experience are significantly associated with the value placed on phonological awareness by educational professionals (Jordan et al., 2019). In addition, their professional development is also associated with the experiences of articulation with other professionals (Cunningham and O'Donnell, 2015). The valorization of the multidisciplinary work identified by the participants may thus substantiate the value that these professionals place on phonological awareness and the practices they adopt, in order to overcome the disabilities identified in the students (Pisheh et al., 2017). In particular, an articulated and sequential work between pre-school teachers and primary teachers seems to be essential, ensuring a positive transition between pre-school and primary school.

# CONCLUSION

The present study is a pilot exploratory study integrated into a larger project aimed at promoting school success in a school cluster with high rates of school failure and early school dropout (*Learning with All* Project). Considering that school failure is strongly correlated with learning disabilities in reading in the early years of schooling, and, in turn, the prevention of these specific learning disabilities are largely dependent on the development of phonological awareness, and, finally, the development of this pre-academic skill is dependent on the approach of pre-school teachers and primary teachers, it becomes essential, first of all, to understand what value these professionals attribute to this competence. Thus, the main results of this study show that pre-school teachers and primary school teachers, in general, know and value phonological awareness and identify its relevance to explain the learning difficulties they find in their children. The results also reveal that pre-school teachers tend to implement activities intentionally focused on stimulating this skill. To this end, participants prioritize playful, everyday activities, value technological resources, and recognize the importance of collaborative work in this area. However, it is noteworthy that primary school teachers focus more on reading tasks, putting in second place the basic skills that allow their successful completion, namely phonological awareness. It is

also noteworthy that, according to their perspective, the work of pre-school and primary school teachers seems not to be sufficient to overcome the difficulties experienced, considering the impact of the absence of parental support on learning tasks.

A strength of this study is the in-depth exploration of each participant's individual perception, allowing, through their narrative but using a standardized interview protocol, an understanding of the value placed on phonological awareness, the risk factors that may explain, and the pedagogical practices that reflect it, in a school context with high rates of school failure and early school dropout. Moreover, the fact that pre-school and primary school teachers were considered in the same study allows a more integrated reading of the results, as well as the specificity of the contexts, which are intended to be articulated.

In future studies, it would be essential to expand the sample, by adding more clusters of pre-school and primary teachers to deepen comprehend the collaborative work developed to face the gaps on phonological awareness. It is also important that future research include observational data collection in order to clarify and confirm teachers' practices. Thus, simultaneously, it would also be interesting to complement this type of exploratory study with quantitative methodologies that would allow, in a larger sample, to characterize the perceptions and practices associated with the promotion of phonological awareness.

The results shed light to several practical implications. According to an effective multi-tiered approach (Brown-Chidsey and Bickford, 2016), with a view to preventing learning disabilities, it is essential, first and foremost, that pre-school education is valued by the entire political, social, and educational system. Consistent with this valorization, training, capacity building and consulting with early school teachers should be aligned with the current state of research, including the deepening of knowledge and practices at the level of predictors of (in)success in reading and writing. In this way, pre-school teachers will place greater value on phonological awareness, and will be more likely to intentionalize their pedagogical practices in order to stimulate these dimensions that constitute protective factors against school failure. Consequently, universal screening practices should be adopted, in which phonological awareness should be assessed in all children, seeking to identify weaknesses at this level, and providing the opportunity for intervention and stimulation before transition to primary school. When students move to primary school, collaborative work between professionals is essential to optimize the stimulation of phonological awareness and to understand the needs and academic weaknesses or vulnerabilities of each student, as well as the responsiveness of intervention to effectively prevent learning disabilities. This issue is particularly relevant when the educational contexts are of great adversity (e.g., child maltreatment, early life stress), in which several risk factors converge, and in which families are rarely factors of promotion and stimulation of skills. In this sense, the articulation between family and school, and the parental empowerment and availability of resources for consolidation of skills and learning seems to be crucial.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Scientific Council of the Faculty of Education and Psychology - Catholic University of Portugal. The patients/participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

LV and MC contributed to conception and design of the study. FM, CP and IC organized the database. MC performed the qualitative analysis. LV, MC and FM wrote the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

## FUNDING

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