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Teachers' Opinions about the Teaching of Reading in Spain

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A B S T R A C T

Previous research has evidenced which skills are required for reading acquisition and which methods are effective for teaching reading. However, recent research indicated that teachers lack sufficient knowledge about the constructs involved in reading instruction. The purpose of this exploratory study was to examine Spanish teachers' practice and opinions on reading instruction. Two samples of Spanish teachers, 840 Preschool teachers and 876 Primary teachers, were surveyed about their opinion on reading skills, their reading instruction practices, and methods of detecting and assessing reading difficulties. The questionnaire for primary teachers also included questions on preparedness and knowledge. Most teachers favored whole-word methods, included maturity and motivation, as relevant aids for phonological awareness and showed poor grasp of factors underpinning reading acquisition. Teachers showed inconsistent and limited knowledge of the evidence-based approach for effective reading instruction. Specific programs are needed to provide preservice teachers with evidence-based instruction and continuous training for in service teachers.

Las opiniones de los maestros y las maestras acerca de la enseñanza de la lectura en España

Palabras clave:
Enseñanza de la lectura
Conocimiento de los profesores
Preparación de los profesores
Métodos de lectura
Conciencia fonológica

R E S U M E N

Investigaciones anteriores han señalado qué habilidades son necesarias para la adquisición de la lectura y qué métodos son eficaces para su enseñanza. Sin embargo, investigaciones recientes indican que los profesores carecen de conocimiento suficiente sobre los constructos implicados en la enseñanza de la lectura. Este estudio pretende examinar la práctica y las opiniones de los profesores españoles sobre la enseñanza de la lectura. Se encuestó a dos muestras de profesores españoles, 840 de preescolar y 876 de primaria, sobre sus opiniones acerca de las habilidades lectoras, sus prácticas de enseñanza de la lectura y los métodos de detección y evaluación de las dificultades lectoras. El cuestionario para los profesores de primaria también incluía cuestiones para valorar su preparación y conocimiento. La mayoría de los profesores se inclinaron por los métodos globales y consideraron que la madurez y la motivación son ayudas relevantes para adquirir la conciencia fonológica. Además, mostraron escasa comprensión de los factores que sustentan la adquisición de la lectura. Los profesores manifestaron un conocimiento inconsistente y limitado del enfoque basado en la evidencia para la enseñanza eficaz de la lectura. Se necesitan programas específicos para proporcionar a los profesores en formación una instrucción basada en la evidencia y una formación continua para los profesores en activo.

Decades of research have accumulated knowledge of the basic mechanisms of reading and the core skills that support reading acquisition (Muter et al., 2004; Ziegler & Goswami, 2005). Research has also evidenced that children's gains in reading achievement are critically affected by their teachers' ability to provide effective instruction (Binks-Cantrell et al., 2012; McCutchen et al., 2002; Piasta et al., 2009; Podhajski et al., 2009). However, a growing body of research has documented that teachers often lack sufficient knowledge of the constructs related to teaching beginning and struggling readers (Moats, 2009; National Reading Panel, 2000; Walsh et al., 2006), and that they have received insufficient training to understand children's instructional needs (Joshi et al., 2009b; Joshi & Wijekumar, 2019). This study intends to examine if Spanish teachers are knowledgeable of the constructs with proven effectiveness to support children in the process of learning to read.

Despite the ease with which an expert reader extracts the meaning expressed in a written text, reading is a complex skill that requires the coordination of decoding – a resource for word recognition through retrieving the sounds represented by letters (phonemes) – and processes shared with oral language comprehension (Gough

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& Tunmer, 1986; Rayneret al., 2001). Research on literacy has unquestionable, accumulated evidence that reading is not acquired spontaneously (Seidenberg, 2013). Children need systematic and explicit training to learn the alphabetic principle (AP) – the rules that establish the correspondence between phonemes and letters – and to develop phonological awareness (PA) – the knowledge that words are made up of independent sounds (syllable, phonemes), and that these sounds can be added, deleted, or rearranged to form new combinations (Bradley & Bryant, 1983; Goswami, 2002). In what seems a consequence of language development, children progress on their own from the non-analytic recognition of words, rhymes, or word attack to the more analytic identification of the syllable segments (Carrillo et al., 2013). However, they require teachers' guidance to direct their attention to achieve the conscious attainment of the phoneme (Goswami, 2002). Furthermore, as the fact that readers of non-alphabetic writing systems do not develop efficient phonemic skills accredit (Read et al., 1986), phonemic awareness is not boosted by the mere exposure to literacy, but rather the speaker needs the targeted training that takes place through the teaching of letters (Morais et al., 1979).

The discovery of the relationship between PA and reading achievement improved the understanding of the processes involved in learning to read, with clear practical consequences. It provided an essential tool for effective reading instruction (Melby-Lervåg et al., 2012), and enabled the detection of children at risk of difficulties in the early stages of learning to read (Luque et al., 2016; Puolakanaho, et al., 2007). The influential report of the National Reading Panel (NRP, 2000) pointed out that in addition to training on PA and the systematic teaching of the alphabetic principle, effective instruction should focus on vocabulary growth, include reading comprehension strategies, and promote reading fluency. These five components would confer children the necessary support for learning to read. Thus, research findings provide a conceptual framework to implement an effective instructional practice in the classroom (Moats, 2009; Seidenberg, 2013).

Research studies demonstrated that teachers were not fully familiar with the constructs necessary to teach literacy skills (Lyon, & Weiser, 2009; Moats, 2009, 2014). For example, Moats and Foorman (2003) investigated 50 kindergarten and Grade 1, and 41 Grade 2 an 3 teachers' knowledge of the concepts needed for explicit reading instruction. Between 30% and 50% of the participants in this study failed in tasks of phoneme and syllable identification, had problems with spelling and pronunciation rules, and showed poor knowledge of the relations between reading and language comprehension or with the strategies to foster reading fluency. Not very different were the findings from a study in that 252 preservice and 286 in service teachers were required to rate 25 items concerning beliefs and perceptions and 20 items testing knowledge of the concepts involved in reading (Bos et al., 2001). Although most teachers moderately recognized the relevance of explicit PA and alphabetic instruction, they demonstrated insufficient understanding of these constructs. Even though experienced teachers achieved better performance than preservice teachers, in both groups the percentage of correct responses was under 60% to questions concerning the syllable structure, or when they were required to segment words into phonemes, especially if the task involved complex syllables or long words. In the same line, Spencer et al. (2008) assessed the skill of a sample constituted by 160 speech-language pathologists (SLPs) and 109 kindergarten, 112 Grade 1, 100 reading, 60 special education teachers to identify segment and isolate phonemes. Although SLPs outperformed the rest of the groups, educators showed general poor understanding of the phoneme structure or the sound-letter correspondence. More worrying was that reading and special education teachers did not turn up more skillful than class teachers did. Similar findings yielded a recent study by Pittman et al. (2019) with 150 teachers. Although participants demonstrated good grasp of the syllable, they lacked sufficient PA skills and failed on the morphology questions. These results reflected the same gaps already pointed by Joshi et al. (2009b). Furthermore, teachers' low performance was also observed in languages with regular orthography (Aro & Björn, 2016).

The years of experience showed little contribution to improving teachers' knowledge. Experienced teachers were more cautious to calibrate their preparedness to teach (Cunningham et al., 2004), and had slightly better achievement on performance measures than preservice teachers (Bos et al., 2001). However, the two groups showed similar gaps in their knowledge, and were similarly unaware of their lack of knowledge. More positive effects showed the combination of experience and preparation. In particular, Spear-Swerling et al., (2005) found that teachers' background was predictive of perception of knowledge and performance in all tested domains. However, experience was not predictive of knowledge of language structure.

Altogether, these results might imply that a good number of teachers failed to demonstrate the level of conceptual knowledge or the awareness competency to effectively teach reading (Cunningham et al., 2004), especially to children with learning difficulties (Washburn et al., 2010).

The Present Study

Given that teachers play an active role in the process of reading acquisition (Moats, 2014; Rayner et al., 2001; Seidenberg et al., 2013), it is important to investigate if they mastered the relevant knowledge to effectively teach early reading skills. In essence, previous studies suggested that teachers (a) often overestimate their preparedness, (b) have deficient knowledge of the essential constructs underpinning literacy acquisition (e.g., PA or phonics) or the basic linguistic concepts (e.g., phoneme or spelling rules), and (c) struggle with awareness tasks as counting sounds, especially with complex syllables and long words. There are not reasons to assume that Spanish teachers are better equipped to enhance reading achievement. To begin with, in Spain, there are great differences in the methods used to teach reading, from those aimed to enhance a child's motivation to learn and focused on the context to phonic methods intended to explicitly teach letters, phonemes, and syllables (Rendón et al., 2019). Furthermore, despite the phonics methodology is well shaped to the transparent structure of Spanish (Jiménez & O'Shanahan, 2008) and there is solid evidence indicating that decoding provides children with a learning strategy (Share, 1999) that accelerates reading acquisition (Carrillo, & Alegría, 2014; Jimenez & Guzman, 2003), teachers' arguments for method choice are based on their usual practice or common sense rather than on scientific arguments (Jiménez et al., 1997). Finally, a recent study confirms that Spanish teachers share the same misunderstandings about the causes and symptoms of dyslexia (Soriano-Ferrer et al., 2016) as those observed in British and American teachers (Bell et al., 2011; Washburn et al., 2001).

Therefore, the main goal of the present study was to investigate how Spanish teachers approach reading instruction. More specifically, it was intended to examine:

1. Teachers' opinions concerning methodology to teach reading.
2. The aspects teachers consider most relevant for reading acquisition.
3. Teachers' ideas about reading difficulties and reading assessment.
4. The influence of experience on teachers' opinions.
5. Teachers' self-perception of preparedness and actual knowledge of the basic concepts involved in reading.

To achieve these aims, opinions and descriptions of teaching practice were collected from Preschool and Primary teachers. Since, according to current legislation (Spanish Law of Education, 2007), the teaching of reading is not an explicit objective until Primary (6 years), the survey for Preschool teachers was focused on the skills that prepare children for literacy. Some open-ended questions were included to gather their spontaneous answers. The survey for Primary

teachers was focused on self-perception of preparedness, opinions about teaching methodology and reading difficulties. In this second survey, a 1-4 rating format was preferred, except for the five multiple choice questions about knowledge.

Teachers received the survey through the internal mail of the schools as a requirement of the Ministry of Education of Malaga (southern Spain) to be responded on-line for a limited time of 4 weeks.

The Preschool Survey

Method

Participants

A sample of 840 Preschool second cycle (5 years) teachers (794 females, 46 males) from 30 public schools in Malaga (southern Spain) responded the questionnaire. The average age was 44.5 years (SD = 8.1). Most participants had more than 15 years in-service. The majority of teachers (83.6 %) had only the basic training required to become a teacher. Participants with a second training had studies offered by the Faculty of Education (12.8%) or Psychology (2.5%); other studies presented a marginal representation (0.9%). Participants were classified into five groups according to their in-service years: 1-5 years, n = 37 (4.4%); 6-10 years, n = 139 (16.5%); 11-15 years, n = 191 (22.7%); 16-20 years, n = 235 (28.0%); more than 20 years, n = 238 (28.3%).

Instrument

A 26-item questionnaire was elaborated to gather teachers' opinions and description of their teaching practice for introducing children into literacy. Before starting the questionnaire, background information was collected for each participant on the survey, such as age, gender, professional qualification (e.g., degree, master), and years of practice. No name or other identification data were collected. The questionnaire examined the following aspects: a) five questions about teaching literacy, method choice, and the line of action in the schools; b) teachers' opinion about the skills involved in reading acquisition, examined by two open-ended questions, so that teachers expressed their own ideas, nine 4-point Likert scale items to assess the relevance attributed to different skills in learning to read (e.g., PA, maturity), and also eight 4-point Likert scale items to indicate agreement with statements about teaching organization; c) finally, teachers' opinions about detection and assessment of reading difficulties as assessed by one yes-no question, one multiple choice question, and two 4-point Likert scale items concerning their opinions and actions towards the detection of reading difficulties. Questionnaire items are included in Table 1.

The factor analysis using principal components extraction and varimax rotation yielded six factors with a total explained variance of 55%: skills involved in reading (12.1%), explicit teaching (11.4%), whole-word methodology (9.716%), child's own abilities (8.117%), difficulties assessment (7.854%), and method choice (5.923%). The internal consistency of the items was acceptable (Cronbach's alpha = .624).

Procedure

Teachers responded the questionnaire in their own computers. The average time to complete the survey was 15 minutes.

Results

The goal of this study was to examine teachers' opinions about the process of learning to read and how they approach their teaching. For clarity, only percentages of teachers reporting a score of 4 (*strongly agree*) are presented in Table 1.

Reading Method

Contrary to national regulations, 93.3% declare teaching to read. There was high agreement among teachers that the mixed method (starting with words associated to object pictures, then later introducing letters) is the most appropriate (60%). A lower percentage (16.2%) preferred a whole-word method, while very few used a phonetic (11.8 %) or syllabic method (3.3%). More than half of the respondents do not think it is positive that teachers teach reading according to their own criteria (60.6%), even when 53.8% have ultimately used a method they do not agree with. Their own or their colleagues' experience was the most common criteria used to select the teaching method (86%). Only 7% declared that they were influenced by reading training courses or any other, not determined, information.

What Skills Get Children Ready to Read?

Two types of formats have been utilized to examine the skills teachers consider to be a necessary foundation for learning to read. Open-ended questions collected information about the teachers' own ideas. Likert scale statements provided a comparative estimation of the value attributed to the skills. The responses to the open-ended questions showed that a great proportion of participants included maturity (38.7%), motivation (32.2%), and PA (30.9%) as factors that impacted readiness to read. The oral language skills (22.5%), body scheme knowledge (22.3%), motor skills (21.8%), and attention (21.5%) were also frequent responses. Only a limited number of teachers pointed to language skills (PA, oral language, comprehension, or vocabulary), and the alphabetic knowledge (6.3%). These results could indicate that teachers did not clearly differentiate between poorly defined constructs relative to a child's condition (i.e., maturity), whose content is difficult to determine or to stimulate, from the skills that the child needs to understand the relation between language and print. The Likert scale items showed that, independently of their expertise, most participants strongly agreed that maturity (88.9%), motivation (90.0%), auditive discrimination (86.8%), and phonological awareness (83.6%) played a relevant role in learning to read. The relevance of vocabulary was emphasized by 66%, and 50.8% considered the conversion rules that relevant. There was a main effect of in-service years on the relevance attributed to body scheme, laterality, and learning from context. The least experienced teachers (40.5%) were significantly less confident on the effect of body scheme, $F(1, 4) = 6.240$, $p < .0001$, than the most experienced teachers (67.6%). The proportion of teachers that pointed laterality as essential for learning to read was significantly higher among the most experienced (56.9%) than among the least experienced teachers: 37.8%, $F(1, 4) = 3.856$, $p < .003$. However, the least experienced teachers agreed in a significantly higher proportion (73%) than the most experienced ones (52.6%) that learning from context is a relevant skill, $F(1, 4) = 4.104$, $p < .004$. The effect sizes were moderate. When they were asked about the signs that a child is ready for reading, maturity (51.5%) and motivation (36.3%) were again the most common answers. Only 10% mentioned phonological awareness. Interestingly, 8% of teachers reported that children are ready for reading "when they demand it", suggesting that it depends on the child's own resources and ignoring the fundamental knowledge and skills that are crucial for the child to be ready to read.

Learning Process

The following questions were focused on the process of learning to read. We aimed to establish whether teachers were supportive

Table 1. Percentage of Preschool Teachers Reporting a Score of 4 (*strongly agree*) and Significant Results of the ANOVA Contrasting Years of Experience

	Total	0-5 *n* = 37	6-10 *n* = 139	11-15 *n* = 191	16-20 *n* = 235	+ 20 *n* = 238	*F*
1. Do you teach reading in preschool? YES	93.3	97.3	87.8	95.3	93.6	94.1	
2. Which do you think is the best method for teaching reading?							
- Whole-word	16.2	13.5	15.8	21.5	14.0	14.7	
- Syllabic	3.3	-	1.4	1.6	6.0	3.8	
- Phonics	11.8	5.4	14.4	9.9	11.5	13.0	
- Mixed	60.0	70.3	57.6	58.1	59.1	62.2	
- Others	8.7	10.8	10.8	8.9	9.4	6.3	
3. On what criteria do you base your selection?							
- My own and my colleagues' experience	86.0	75.7	84.9	89.0	87.2	84.5	
- I learnt in training courses	7.0	10.8	5.0	7.9	3.8	10.1	
- Other	7.0	13.5	10.1	3.1	8.9	5.5	
4. Do you think it positive that teachers teach reading according to their own criteria? YES	39.4	51.4	38.8	41.4	38.3	37.4	
5. Were you obliged to use any method you did not agree with? YES	53.8	73.0	70.5	64.4	44.3	42.0	
6. What aspects do you think should be trained before students start reading? Open							
To what extent do you consider the following aspects relevant as precursors for learning to read?							
7. Laterality	56.9	37.8	54.0	52.9	63.0	58.8	3.856**
8. Auditive Discrimination	86.8	75.5	89.9	86.4	86.8	87.0	
9. Maturity	88.9	78.4	88.5	90.6	87.7	90.8	
10. Phonological Awareness	83.6	75.7	87.1	86.9	82.1	81.5	
11. Learning from Context	52.6	73.0	57.6	48.7	54.9	47.5	4.104**
12. GFC rules	50.8	48.6	54.0	47.6	52.3	50.4	
13. Body Scheme	58.9	40.5	51.8	53.4	61.7	67.6	6.240**
14. Motivation	90.0	89.2	88.5	92.7	88.5	90.3	
15. Vocabulary	66.7	67.6	69.8	64.9	68.1	64.7	
16. When learning to read, it is relevant to discover words from context.	31.5	40.5	36.0	31.4	34.5	24.8	
17. The use of context is an important aid and should be trained more than isolated letter recognition.	30.4	40.5	33.8	30.4	27.7	29.4	
18. Learning to read involves explicit and systematic instruction on grapheme-phoneme conversion.	25.2	10.8	33.8	25.1	25.5	22.3	
19. Training phoneme-grapheme associations and then move on to syllables, words and/or phrases is the best way to teach reading.	23.1	45.9	29.5	24.1	28.5	16.8	3.397**
20. Learning to read is a natural process that children access when ready, without systematic instruction	25.7	18.9	35.3	30.9	26.4	16.4	8.129**
21. Letter-sound correspondences should be taught systematically to all students.	15.0	10.8	20.1	11.5	19.1	11.3	
22. When teaching reading, letters should be introduced one by one and not advance until each letter has been completely assimilated.	6.5	2.7	5.8	7.9	7.2	5.9	
23. It is necessary to assess the risk of reading difficulties at preschool.	37.3	36.0	18.9	36.6	40.0	38.7	
24. What do you do when a child seems to be at risk of reading difficulties?							
I ask the qualified specialist	51.8	56.8	51.8	53.4	55.3	46.2	
I ask my colleagues	10.2	16.2	16.5	14.7	8.5	3.8	5.924**
I search for further information (i.e., Internet).	0.5	-	0.7	0.5	0.4	0.4	
I implement my own strategies to improve their learning.	37.4	27.0	30.9	30.9	35.7	49.6	5.824**
25. Risk assessment is unnecessary because preschool teachers can identify which students will have reading difficulties.	8.6	9.4	18.9	6.3	8.1	11.8	2.750*
26. In kindergarten, it is not possible to identify children at risk until they do not learn to read.	10.7	10.8	12.2	11.5	7.7	12.2	

of a systematic teaching approach, or if they were inclined to adopt a more contextual whole-word approach; 8 items were included. A substantial proportion (31.5%) strongly agreed that "It is important that children discover words from context and that context is a relevant tool for word recognition" (30.4%). A lower percentage of teachers agreed that "Learning to read needs explicit and systematic teaching of the grapheme to phoneme conversion (GPC) rules" (25.2%) or that "Letter-sound correspondence should be systematically trained" (15%). There were no significative differences associated to years of experience. Significative differences were found between the percentage of teachers that agreed with that "the order of teaching is phoneme, syllable, word", $F(1, 4) = 3.397$, $p = .009$), and that "reading is a natural learning", $F(1, 4) = 8.129$, $p < .001$. Finally, the least experienced teachers were

significantly more confident on the use of primers than teachers with longer experiences, $F(1, 4) = 3.395$, $p = .003$. The effect sizes were low.

Reading Difficulties Detection and Assessment

Only a small proportion of participants in this study thought reading difficulties should be assessed (37.3%). Here, experience had a statistically significant influence: experienced teachers were more confident in their ability to detect children with difficulties than the least experienced, $F(1, 4) = 2.750$, $p = .027$. Half of the teachers, even the least experienced, declared themselves able to identify children with reading difficulties, although only 8.6% strongly agreed that "the teacher is able to detect which child will have reading difficulties". When they did, around 50% contacted the school's Counseling Team. A low percentage, that is significantly higher among less experienced teachers, $F(1, 4) = 5.924$, $p = .00$, consult with their colleagues, while with experience there is a significant increment in the percentage of teachers that declared that they establish their own strategies to aid disadvantaged children, $F(1, 4) = 5.824$, $p = .00$. Finally, almost none of the teachers declared that they try to look for further information.

The Primary Survey

Because introducing children into literacy is a main goal in Primary, the questionnaire was intended to examine their ideas about reading instruction and their actual practice in the classroom. Based on the questionnaire used with Preschool teachers and after reviewing some of the previously published questionnaires (Moats & Foorman, 2003; Pittman et al., 2019; Podhajski et al., 2009), a new questionnaire was developed that consists of 36 items to be responded in 4 points Likert scale, except the five items intended to assess their knowledge.

Method

Participants

The participants included 876 Primary teachers (732 females, 146 males) from 268 public schools in Malaga. The average age was 44.5 years ($SD = 8.1$). The participants' distribution according to their in-service year was: 1-5 years, $n = 194$ (22.1%); 6-10 years, $n = 125$ (14.3%); 11-15 years, $n = 169$ (19.3%); 16-20 years $n = 132$ (15.1%); more than 20 years, $n = 256$ (29.2%). The majority of teachers (8.9 %) had only received the basic training required to become a teacher, 3.3% had a second training on Education Sciences, 4.8% on Psychopedagogy, and 1.6% on Psychology, 1.4% following other studies. Participants were classified into five groups according to their in-service years: 1-5 years, $n = 194$ (22.1%); 6-10 years, $n = 125$ (14.3%); 11-15 years, $n = 169$ (19.3%); 16-20 years, $n = 132$ (15.1%); more than 20 years, $n = 256$ (29.2%).

Instrument

For each participant age, gender, professional qualification (e.g., degree, master), and years of practice was obtained. No name or other identification data were collected. The Preschool questionnaire was reviewed to transform open-response questions into a 4 points-Likert scale format, and to eliminate repetitive or ambiguous questions. Questions on perceived preparedness were included. Although knowledge assessment was not an objective of this study, five multiple choice questions on knowledge were added. The final questionnaire included 36 items examining the following aspects: a) teachers' self-perception of preparedness for teaching reading (5 items), b) the value they attributed to experience and science in the choice of reading method (6 items), c) method of reading instruction (8 items), d) the skills they considered to be involved in reading acquisition (5 items), e) their opinions about reading difficulties detection and assessment (7 items), and five questions of knowledge, where teachers were asked to respond to five multiple choice questions. Their score on this section was the number of correct responses. For a complete view of the items, see Table 2.

The internal consistency of the items was acceptable (Cronbach's alpha = .70). The factor analysis using principal components extraction and varimax rotation yielded nine factors with a total explained variance of 58.24%: training (8.593%), experience (8.506%), explicit teaching (8.227%), whole-word methodology (6.869%), difficulties assessment (5.985%), need training (5.921%), skills involved in reading (5.853%), child's own abilities (5.788%), teachers need training (4.815%), and method choice (3.606%).

Results

Do Teachers Perceive Themselves Prepared for Teaching Reading?

Participants agree (52.4%) or strongly agree (15.5%) that they have received good training; they perceived themselves quite prepared (57.4%) or highly prepared (32%) to identify children with learning difficulties, to teach them to read (48%) and (16%), and to choose the best teaching method (50%) and (17%), respectively. However, the percentage of those who agree (38%) or strongly agree (32%) that they lack information is lower. There are significant differences in these items, as those with long experience are the most satisfied with the information received, $F(1, 4) = 7.275$, $p < .00$, they feel better prepared to detect reading difficulties, $F(1, 4) = 7.903$, $p < .00$), to teach struggling readers, $F(1, 4) = 6.448$, $p < .00$, to choose reading method, $F(1, 4) = 11.940$, $p < .00$, and are less interested in receiving continued training on scientific advances than less experienced teachers, $F(1, 4) = 4.231$, $p < .00$).

Preparedness and Actual Knowledge

Teachers' perception of moderate preparedness contrasted with the scores obtained in the knowledge items. From the 876 participants that constituted the whole sample, only 5 participants provided the correct answer to the five knowledge questions, and 79 gave four correct answers. The mean number of correct answers was 2.25, under half of the total. Post hoc analyses on the main effect of in-service years, $F(1, 4) = 2.839$, $p < .023$, indicated that the highest scores significantly corresponded to the most experienced teachers.

Only one item related to preparedness was found correlated with the scores on the knowledge questions ($r = .128$, $p < .000$): "When I started working, I realized that I lacked specific training on teaching reading". Those who recognized lack of knowledge obtained the highest scores.

Method of Instruction

A non-negligible percentage of teachers shared the idea that "learning to read is a natural process" (35% agree and 13% strongly agree). According to Tuckey post hoc analyses, the main effects of years of experience found, $F(1, 4) = 4.951$, $p < .001$, showed that the least experienced teachers were less keen to agree with the statement. Whole-word methodology is very popular among teachers independently of their experience. The 54.8% agree and 21.8% strongly agree that "it is important that children discover words in context"; 42.9% agree and 12.4% strongly agree that "learning from context is more helpful than learning phonemes";

Table 2. Percentage of Primary Teachers Reporting a Score of 4 (*strongly agree*), and Significant Results of the ANOVA Contrasting Years of Experience

	Total	0-5 *n* = 194	6-10 *n* = 125	11-15 *n* = 169	16-20 *n* = 132	+ 20 *n* = 256	*F*
1. I received good training on the teaching of reading.	15.5	12.4	12.0	13.0	13.6	22.3	7.275**
2. I am prepared to detect students with reading and writing difficulties.	31.8	25.3	30.4	27.2	28.8	42.2	7.903**
3. I am prepared to develop a program for teaching reading to students with reading difficulties.	16.2	11.9	12.8	11.8	23.5	20.3	6.448**
4. I am prepared to decide which method is the most appropriate to teach children to read.	17.0	11.9	12.8	11.8	20.5	24.6	11.940**
5. When I started working, I realized that I lacked specific training on teaching reading.	32.3	37.6	36.8	36.1	30.3	24.6	2.501*
6. When choosing a method, the teacher's experience with that method is more important than its proven effectiveness.	18.7	10.8	14.4	21.9	20.5	23.8	4.106*
7. The experience in the classroom provides more relevant information about teaching methodology than scientific research.	28.7	26.3	24.0	29.6	31.8	30.5	
8. In order to choose reading method, teachers should take into account scientific information rather than their experience.	7.1	9.8	5.6	5.9	6.8	6.6	
9. Teachers should receive continuous training to keep abreast of scientifically proven findings.	61.3	67.5	68.8	63.9	57.6	53.1	4.231*
10. Teachers should adapt to methodologies with evidence proven efficacy.	36.1	41.2	36.0	37.3	34.8	32.0	
11. I rely more on my experience and that of my colleagues than on what scientific studies say.	12.6	12.4	14.4	13.6	12.9	10.9	
12. When learning to read, the most relevant is that children discover words in context.	21.8	25.8	18.4	24.3	19.7	19.9	
13. Teaching reading involves explicit and systematic training on grapheme-phoneme correspondence.	18.6	20.1	17.6	18.9	18.9	17.6	
14. Word recognition in context is relevant aid that should be trained more than the recognition of individual letters.	22.8	28.9	19.2	26.6	16.7	20.7	2.979*
15. Learning from context is more helpful than learning phonemes.	12.4	12.9	10.4	17.8	8.3	11.7	
16. The teaching of reading should start by enhancing phonological awareness.	41.0	36.1	47.2	43.2	43.2	39.1	
17. There is no need of systematic instruction because learning to read is a natural process that children achieve when they are ready.	13.0	10.3	10.4	16.6	18.9	10.9	4.951**
18. Identifying sound is more important than the recognition of words from context.	11.5	9.8	10.4	16.0	13.6	9.4	
19. The child will learn to read easily when able to recognize word sounds.	16.3	11.9	15.2	17.2	20.5	17.6	
20. Training motor coordination and laterality contributes directly to the acquisition of reading and writing.	51.5	49.0	51.2	40.8	46.2	63.3	5.458**
21. Learning vocabulary directly produces an improvement in reading.	48.3	50.0	52.8	40.2	43.2	52.7	3.027*
22. Stimulating interest in stories and reading is more effective for learning to read than phonological awareness.	31.5	37.6	36.0	32.5	25.8	27.0	4.766**
23. Children learn the letters and sounds of words almost on their own when they are mature; they do not need to be taught systematically.	7.0	3.6	8.0	10.1	6.8	7.0	5.235**
24. Children acquire phonological awareness through reading words on their own when they are sufficiently mature.	37.3	42.8	39.2	33.7	38.6	34.0	
25. Teaching words with similar spellings (e.g., *casa-gasa-masa-pasa*) is an effective method with children who have reading difficulties.	14.5	17.5	15.2	13.6	9.8	14.8	
26. Learning to segment words into phonemes is a good aid for struggling readers.	20.2	22.2	22.4	20.1	19.7	18.0	2.839*
27. Poor phonological awareness can lead to early difficulties in learning to read.	40.2	42.8	40.0	42.0	42.4	35.9	
28. Difficulties in learning to read are due to the child not being mature enough.	11.5	6.2	15.2	12.4	14.4	11.7	6.145**
29. It is convenient to evaluate the risk of reading difficulties in order to act early.	36.5	35.6	24.8	30.8	40.2	44.9	5.964**
30.ing difficulties cannot be predicted before the child begins to learn to read.	11.4	12.4	12.8	13.0	9.1	10.2	
31. It is not possible to detect the risk of reading difficulties at an early age because one never knows how the child will evolve.	8.7	9.8	8.0	9.5	9.1	7.4	
Knowledge mean correct answers (*SD*)	2.24 (0.98)	2.05 (0.98)	2.16 (1.08)	2.27 (0.95)	2.23 (0.93)	2.42 (0.96)	4.434**

and 51.7% agree and 22.8% strongly agree that "recognition of words in context is a relevant aid that needs to be trained more than the recognition of individual letters". Although main effects of years of experience were found for this last statement, Tuckey post hoc analyses did not show that any group clearly differed from the others.

Teachers' Understanding of PA Relevance over other Aspects as a Pre-reading Skill

In general, teachers recognized the relevance of PA. Nevertheless, from teachers' perspective, enhancing children to discover words from context (a whole-word approach) is compatible with a completely different phonics approach. Thus, independently of in-service experience, teachers showed their acceptance that teaching reading involves explicit and systematic training on grapheme-phoneme correspondence (48.6% *agree*, 18.6% *strongly agree*); the teaching of reading should start by enhancing phonological awareness (47.5% *agree*, 41% *strongly agree*); identifying sound is more important than the recognition of words from context (45.8% *agree*, 11% *strongly agree*); the child will learn to read easily when able to recognize word sounds (54.1% *agree*, 16.3% *strongly agree*).

Arguments to method selection Teachers are highly confident on theirs and their colleagues' experience (46.3% *agree*, 12.6% *strongly agree*) and report that the experience in the classroom (50.8% *agree,* 28.7% *strongly agree*) provides more relevant information about a teaching methodology than scientific research. Nevertheless, a good percentage accepts the argument that teachers should take into account scientific information rather than their experience (38.8% *agree,* 7.1% *strongly agree*), and that teachers should adapt to methodologies with evidence proven efficacy (50.7% *agree*, 36.1% *strongly agree*). In addition, a low percentage accept that teachers should use the method with which he or she is most familiar rather than switching to another method no matter if science says it is more effective (23.3% *agree,* 5.9% *strongly agree*). No main effects of experience were found for these items.

Other Skills

Along with phonological awareness, teachers consider other factors relevant to enhancing reading acquisition. Some factors have been shown related to reading. For example, vocabulary learning (42.8% *agree*, 48.3% *strongly agree*), whit a main effect of years of experience, $F(1, 4) = 3.027$, $p < .017$, and oral language (47.3% *agree,* 37.3% *strongly agree*). However, they also agree with the relevance of other aspects not directly related to reading, such as motor coordination and laterality (40.3% *agree,* 51.5% *strongly agree*), whit a main effect of years of experience, $F(1, 4) = 5.458$, $p < .000$. Furthermore, they assume that general and difficult to define aspects such as promoting reading enjoyment – i.e., motivation – (41% *agree,* 31.5% *strongly agree*), with a main effect of experience, $F(1, 4) = 4.766$, $p < .001$, or in a lesser percentage maturity (30.4% *agree,* 7% *strongly agree*) with a main effect of experience, $F(1, 4) = 5.235$, $p < .000$, are more effective than phonological awareness. Tuckey post hoc showed that the most recent teachers differ from the other groups in that they gave more relevance to motivation, but they are less confident in that "systematic teaching is unnecessary explicit teaching".

Reading Difficulties Detection and Assessment

Although there is general agreement that learning difficulties are associated to deficit in phonological awareness (48.4% *agree*, 40.2% *strongly agree*), 41.9% of teachers agree and 11.5% strongly agree that difficulties are caused by low maturity, with main effects of experience, $F(1, 4) = 6.145$, $p < .001$. Tuckey post hoc analyses showed that new teachers differed from the rest.

In regard with teaching children with learning difficulties, 47.4% of teachers agree and 14.5% strongly agree that using words with the same spelling is an effective method, and 54.1% of teachers agree and 20.2% strongly agree that segmentation is a good strategy. Tuckey post-hoc analyses showed that main effects of experience, $F(1, 4) = 2.839$, $p < .023$, are due to the fact that recent teachers are more confident with the last statement.

Finally, although 38.1% of teachers agree and 36.5% strongly agree the convenience of early detection, 31.8% of teachers agree and 11.4% strongly agree that learning difficulties could not be detected until the child starts learning to read.

Discussion

This study examined teachers' opinions and understanding of the factors to effectively teach literacy skills and their opinions about the assessment and detection of reading difficulties. More specifically, it was examined whether they were favorable to using an explicit and systematic approach based on phonics or if they rather preferred a whole-word methodology. Two groups of teachers were selected for this study. Preschool teachers, because they are expected to train children on the skills that prepare for reading; and primary teachers because they are responsible for teaching reading. In general, responses indicate that teachers feel comfortable with the idea that learning to read is a natural process that most children achieve by their own resources. For example, half of the Preschool teachers made statements like teachers should follow the children's pace or children suddenly start reading, when they are ready. The whole-word approach also seems to be popular among teachers. It was highly supported that the use of context to discover words and their components plays a relevant role in learning to read, despite the fact that its low effectiveness has been long ago demonstrated (Rayner et al., 2001), especially with struggling readers (Stanovich, 1993). However, a closer examination of participants' responses showed that a high proportion of teachers also agreed with statements supporting systematic-explicit teaching and the crucial role of PA. Concurrent with findings from previous studies (Binks-Cantrell et al., 2012; Gelfuso, 2018; Moats, 2009), this in appearance "heterogeneous approach" might be revealing that teachers have a poor understanding of the constructs underlying activities aimed at reading instruction.

Furthermore, teachers' responses suggest that the majority of participants could not correctly distinguish the evidence-based skills that lead to an effective reading instruction from other aspects not directly related to reading. Preschool teachers commonly included vague constructs as maturity or motivation as relevant precursors of reading, and rated them more relevant than PA when assessed by a Likert scale. Body scheme, motor skills, or spatio-temporal orientation were included by Preschool teachers in the open-ended questions with the same frequency as oral language, and even more frequently than the alphabetic principle. In the group of Primary teachers, motor coordination, laterality, and motivation were rated as relevant aids as vocabulary, and oral language skills. In addition, the percentage of Primary teachers supporting that discovering words from context is a relevant aid is higher than those supporting the relevance of identifying word sounds, especially among less experienced teachers.

More alarming is that most teachers correctly recognized what a phoneme or a syllable is, but they failed the items about PA. So, the question obviously arises is what skills they are thinking of when they agree that PA deficit can lead to reading difficulties. The majority of both Preschool and Primary teachers agreed on the need for early assessment to give appropriate intervention. However, a non-negligible percentage of teachers distrusted early detection based on the argument that assessment is not reliable before the teaching of reading takes place. Furthermore, a good number of the Preschool teachers agreed that assessment is unnecessary because they can detect children at risk, and among the Primary teachers because children' evolution is unpredictable. This lack of confidence in early detection may be revealing that teachers barely grasped that learning to read is based on skills (i.e., oral language, phonological

processing) whose proficiency can be effectively assessed at an early age (Caravolas et al., 2012; Carroll et al., 2003).

This apparent lack of solid knowledge of the process of learning to read may be a substantial problem since teachers are more confident in their own experience than relying on the results of studies carried out with scientific rigor. Our findings corroborate previous research in that on average teachers perceived moderately prepared, and that their self-perception of preparedness improved with teaching experience (Bos et al., 2001; Spear-Swerling et al., 2005). However, although long experienced teachers achieved significantly higher mean scores on the knowledge items than young teachers did, concurrent with previous studies, the vast majority did not exceed 60% of correct answers (Bos et al., 2001; Spencer et al, 2008). It suggests that classroom practice may actually lead teachers to a deep analysis of the reading process, but some constructs need specific training (Clark et al., 2017). On the other hand, only the perceived lack of training at the beginning of their practice yielded statistically significant correlations with the knowledge scores. One possible interpretation of this result may be that participants who do not feel prepared to teach reading could be more active in searching for information, leading to their having more knowledge than those who feel prepared.

Limitations

The current study collected teachers' opinions about the practice of teaching to read. However, the objective assessment of their actual knowledge of the basic constructs was limited and could only be conducted on the primary samples. This is an important limitation because we cannot be sure whether teachers have genuinely mastered the concepts involved in reading. Further research is needed to assess actual teachers' preparedness. Nevertheless, this assessment might not provide more accurate understanding of the activities developed in the classroom than the descriptions gathered in this study. Another limitation is that, although it was required by the education administrators, participants responded voluntarily to the questionnaires. It might be the case that only the most motivated teachers responded. Finally, since all participants in this study were in-service teachers in Malaga, their responses may not be representative of teachers in other regions of Spain. The breadth of the samples might provide an overview that partly compensates for these weaknesses.

Conclusions

Based on the findings from the present study, the Preschool and Primary teachers of the sample showed inconsistent and limited understanding of the evidence-based skills for effective reading instruction. It may even be the case that they do good practice, but they do not know the theory behind it. Other studies have shown that teachers often hold erroneous interpretations of scientific results applicable to the educational setting (e.g., neuromyths; Dekker et al., 2012; Ferrero et al., 2020). In the field of education, these misconceptions are of particular concern, as teacher preparation is a key factor in the success of children's learning. Previous findings signaled that well-prepared teachers produce better reading outcomes in their students (Al Otaiba & Lake, 2007; Brady et al., 2009; McCutchen et al., 2002; Podhajski et al., 2009; Spear-Swerling et al., 2005). Without the knowledge base required, teachers are likely to promote ineffective strategies, what could have serious consequences if they are assisting children with learning difficulties. A potential cause of these gaps in knowledge is that recent research findings have not been communicated effectively to teachers (Joshi et al., 2009a; Joshi et al., 2009b; Walsh et al., 2006). Recent studies have demonstrated that after the provision of specific instruction, teachers spend more time on activities to explicitly train the skills that have been shown to be predictive of success in learning to read (Piasta et al., 2009; Pittman et al., 2019).

Teachers should not be blamed for their shortcomings. Rather, education administrators must ensure that university programs provide up-to-date, evidence-based training on the effective skills for reading instruction to meet the demands of the classroom. Such training should make teachers aware that teaching techniques must be based on rigorous knowledge and be proven through research (Goswami, 2006; Moats, 2014; Seidenberg, 2013). Furthermore, teachers should receive continuous support to update their practice to scientific findings. Nevertheless, to facilitate the transfer of scientific discoveries to the field of education, researchers should focus on objectives close to the needs of the school and present their results in a way that is easy for educational practitioners to interpret. This symbiosis between research and educational practice can help to reduce knowledge gaps and the dissemination of misconceptions among teachers.

Conflict of Interest

The authors of this article declare no conflict of interest.

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