



Original

Effect of the interactive Groups In the Learning of the Reading by Means of Familiar Collaboration[☆]



Raúl Gutiérrez-Fresneda

Departamento Psicología Evolutiva y Didáctica, Facultad de Educación, Universidad de Alicante, Alicante, Spain

ARTICLE INFO

Article history:

Received 25 September 2018
Accepted 6 February 2019

Keywords:

Reading
Written language
Functional reading
Interpersonal communication

Palabras clave:

Lectura
Lenguaje escrito
Lectura funcional
Comunicación interpersonal

ABSTRACT

The learning of reading is a priority objective of educational systems, and it is increasingly necessary that families and educational communities share certain responsibilities. It is known that the family context has significant implications in this achievement, however, there are few studies aimed at analyzing the impact that family participation presents in the acquisition of reading through inclusive dynamics in the classroom. The purpose of this work was to study whether programmes focused on the development of pre-literacy skills through interactive groups with family participation favour access to the literacy process. A quasi-experimental design of comparison between groups with pretest and posttest measurements was used. The study involved 324 students aged between 5 and 6 years. The results support the teaching models that encourage family participation in the classroom for the improvement of reading learning.

© 2019 Universidad de País Vasco. Published by Elsevier España, S.L.U. All rights reserved.

Efecto de los grupos interactivos en el aprendizaje de la lectura mediante la colaboración familiar

RESUMEN

El aprendizaje de la lectura constituye un objetivo prioritario de los sistemas educativos, y es cada vez más necesario que las familias y las comunidades educativas compartan determinadas responsabilidades. Se sabe que el contexto familiar tiene implicaciones significativas en este logro; sin embargo, son escasos los estudios orientados a analizar el impacto que la participación familiar presenta en la adquisición de la lectura a través de dinámicas inclusivas en el aula. El propósito de este trabajo se centra en estudiar si los programas orientados al desarrollo de las habilidades prelectoras mediante grupos interactivos con participación familiar favorecen el acceso al proceso de alfabetización. Se emplea un diseño cuasi-experimental de comparación entre grupos con medidas pretest y posttest. En el estudio participan 324 estudiantes con edades comprendidas entre los 5 y los 6 años. Los resultados apoyan los modelos de enseñanza que fomentan la participación familiar en el aula para la mejora del aprendizaje de la lectura.

© 2019 Universidad de País Vasco. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

The positive influence of the family on school performance has been evidenced in recent studies (Fuentes, García, Gracia, & Alarcón,

2015; Mora-Figueroa, Galán, & López-Jurado, 2016), relating positively to success indicators such as the decrease in the number of repetitions of courses, the improvement in performance tests and decline in the percentage of school dropouts (Sukhram & Hsu, 2012).

Different investigations have shown that the involvement of family members in early reading increases the vocabulary of the learners (Hargrave & Sénéchal, 2000), has positive effects on oral expression and comprehension skills and narrative constructions are better contextualized (Lever & Sénéchal, 2011). Positive effects of family reading practices have also been found with respect to the

PII of original article: S1136-1034(18)30236-3.

[☆] Please cite this article as: Gutiérrez-Fresneda R. Efecto de los grupos interactivos en el aprendizaje de la lectura mediante la colaboración familiar. Revista de Psicodidáctica. 2019;24:138–144.

E-mail address: raulgf4@hotmail.com

students' oral expression and comprehension skills, as well as on alphabetic knowledge, phonological sensitivity and orthographic awareness (Hindman, Skibbe, & Foster, 2014). Sénéchal (2006) compares three forms of involvement of parents with respect to their children's learning to read: teaching them specific reading skills, listening to children's reading and reading. In all the cases in the study carried out it was observed that the involvement of relatives has a positive effect on the process of the acquisition of reading. However, the fact that parents teach their children particular reading skills such as the alphabet, word reading and grapheme-phoneme correspondence is the most effective facet. In this sense, it is relevant to highlight the contributions of Paratore and Yarden (2011) who affirm that the literacy process of school children can be advanced to a greater extent if educators teach their families effective reading interventions.

Currently, a practice that is on the rise as an alternative to the traditional teaching model and that is offering positive results for the participation of students together with the involvement of family members is that of learning communities, which are projects based on dialogical learning and have the intention of linking the whole community in the educational process (Álvarez & Puigdemívol, 2014; Flecha & Soler, 2013). The learning communities are characterized by enhancing the interactions and dialogue between people as a determining factor for school success through the creation of a series of interactive groups to carry out different activities around school content together with the collaboration of volunteers who support and stimulate the work of each group (Elboj & Niemelä, 2010).

Previous experiences of family members who participated as collaborators in the training process of students in school through learning communities sharing certain educational responsibilities have offered satisfactory results both in relation to motivation and learning to read (Isaura, Carrera, & Madrigal, 2017; Mora-Figueroa et al., 2016), which may be due, among other aspects, to the considerable reduction in the teacher–student ratio, to numerous aids that are produced among peers, as well as to the confidence to express knowledge and personal ideas, all of which entail an increase in interactions around the learning process (Peirats & López, 2013).

Reading is acquired progressively as a result of the training received along with the stimulation offered by family and social environment (Sellés & Martínez, 2008). However, despite the positive influence of family involvement in the education of children, there are few studies conducted on the interactions between parents and children within the school setting (Azpillaga, Intxausti, & Joaristi, 2014), especially in early ages (Melgar, 2015). In addition, there are no studies that analyze the influence of pre-literacy skills directly linked to the acquisition of reading in interactive groups with the help of family participation, as a possible strategy for educational improvement.

However, in order to favour the learning of reading, it is fundamental to consider the skills that are directly linked to this learning, as is the case of phonological awareness, speed of naming and alphabetic knowledge (González, López, Vilar, & Rodríguez, 2013), as they allow the development of word recognition mechanisms and the automation of processes that involve associating the orthographic form of words with their phonological form.

Phonological awareness refers to the ability to intentionally identify, segment or combine sub-lexical units of words, that is, syllables, intra-syllabic units, and phonemes. In studies which have considered the influence of phonological awareness on the learning of written language, it was found to be one of the most relevant predictors of access to the literacy process.

Related to phonological awareness is the speed of naming, which is highly predictive of learning achievement in reading, in

that it reflects the speed of processing and provides information on the establishment and use of orthographic representations of words (González, López, Cuetos, & Vilar, 2017).

Alphabetical knowledge is another relevant component of the literacy process. Previous studies have shown that it is one of the best predictors of learning to read (Catts, Fey, Tomblin, & Zhang, 2002; Gutiérrez, 2018).

It should be taken into consideration that learning to read is a complex process that requires the reader to put into practice a series of skills and knowledge, which if carried out jointly by several people verbalizing and sharing their own reading strategies, can contribute to a greater dexterity of the mechanisms that intervene in its learning.

The objective of this study was to analyze the effect that the intervention of a programme focused on the development of pre-reading skills such as phonological awareness, speed of naming and alphabetic knowledge presents on the learning of reading through the organization of students in interactive groups with family participation. For this the degree of acquisition of reading is compared in two groups of students between 5 and 6 years of age, one that receives intervention in the process of learning to read through instruction in pre-selection skills through interactive groups that coordinate adults from the family environment, and another which develops the same work programme through the traditional methodology with the presence in the classroom of the teacher. The hypothesis that arises is that the students belonging to the group that receives instruction in interactive teams in which dialogical and collaborative interaction is enhanced, through the participation of volunteer family members, will obtain a better performance in the acquisition of reading as a consequence of joint verbalization and shared reflection that takes place along with the development of the skills that favour access to learning to read, such as phonological awareness, speed of naming and alphabetic knowledge.

Method

Participants

In this study participated 324 students enrolled in the final year of the Pre-school Education stage, aged between 5 and 6 ($M=5.46$, $SD=0.24$). For the selection of the sample, four state and subsidized schools of the province of Alicante located in areas of mid socio-cultural level were chosen at random (measurement taken from the context questionnaire of the diagnostic evaluation test carried out in the Valencian community in which the socio-economic and cultural index of each centre is measured (ISEC), forming two groups: those that would voluntarily apply the intervention programme (experimental group) and those which would not apply it (control group). In each study group, Spanish-speaking subjects who did not present physical, psychic or sensory alterations and who had a normal intellectual level were selected. The assignment of the centres to the different levels of treatment were carried out randomly before evaluating the students, with one state school and another subsidized one in the experimental group, as well as in the control group. Regarding the distribution of students, the experimental group consisted of 160 students ($M=5$ years and 4 months, $SD=4.32$) of which 48.5% are male and 51.5% female, while the control group was formed by 164 participants ($M=5$ years and 6 months, $SD=3.74$) with 49.3% males and 50.7% females. The contingency analysis (Pearson chi-square) between condition and sex does not show statistically significant differences ($\chi^2=0.47$, $p>.05$).

Instruments

In order to evaluate the dependent variables under study, four evaluation instruments were used with psychometric guarantees of reliability and validity.

Test for the Evaluation of Phonological Awareness (PECO) (Ramos & Cuadrado, 2006). This test evaluates the levels of phonological awareness (syllabic and phonemic), each of which consists of three different tasks: identification, addition and omission. The maximum score that can be obtained is 30, one point for each correct answer and zero for each error. The reliability, measured through coefficient of Cronbach .80. In addition, the composite reliability index (FC = .88), the average variance extracted (VME = 52.34%) and the McDonald omega coefficient ($\Omega = .61$) were obtained.

Initial reading Battery (BIL). The initial reading battery was used developed by Sellés, Martínez, Vidal-Abarca and Gilabert (2008). In order to assess the skills that facilitate access to reading, subtests were used: recognizing words, recognizing sentences and knowledge of the name of the letters. The score in each of these tests was obtained by assigning one point to each correct answer. These subtests have a coefficient of Cronbach .78. The results show that the composite reliability was high (FC = .86), as well as the average variance extracted (VME = 53.26%) and McDonald's omega coefficient ($\Omega = .75$), which implies that a high percentage of the variance is explained by the construct.

Naming speed. The Rapid Automatized Naming Test (RAN) (Wolf & Denckla, 2003, adapted to Spanish by Fernández & Lamas, 2018). The purpose of this task is to name 200 stimuli grouped into four subtests: digits, letters, colours and drawings, as quickly as possible. In the registry of the task, the time it takes to name the stimuli of each card and the number of mistakes made when naming them is noted. With these two data an efficiency index is made for each of the four types of subtests presented, according to the procedure used by Compton (2000), which consists of converting the scores in digits per second, letters per second, colours per second and drawings per second. This test presents a coefficient of Cronbach .80. The results show that the composite reliability was high (FC = .82), as well as the average variance extracted (VME = 59.27%) and McDonald's omega coefficient ($\Omega = .68$), which indicates that the test is reliable.

Evaluation of reading processes. For the evaluation of reading, two subtests of the PROLEC-R test (Cuetos, Rodríguez, Ruano, & Arribas, 2007) were used, specifically the reading of words and pseudowords tests in order to assess the degree of dexterity of the reading process both in words and in linguistic units without lexical meaning, as well as checking the acquisition of grapheme-phoneme correspondence skills. The total score in each of these tests was obtained by assigning one point to each correct answer, also taking into account the time spent in each subtest. This test presents a coefficient of Cronbach .79. The results indicate that the composite reliability was high (FC = .93), as well as the average variance extracted (VME = 56.78%) and McDonald's omega coefficient ($\Omega = .76$).

Design and procedure

The study uses a quasi-experimental design of repeated pre-test–post-test measures with a control group. At the beginning and after developing the work programme, four evaluation instruments were applied to the experimental and control students in two different sessions (in the first, the students were assessed through the PECO and BIL tests and in the second, the RAN and PROLEC-R tests were used), with the purpose of measuring the dependent variables on which the hypothesis that the programme was going to have an effect was centred: phonological awareness, speed of naming and alphabetic knowledge. Previously trained education

professionals carried out the application of the tests before and after implementing the programme, which facilitates the homogeneity in the collection of the data.

The initial assessment of the students was carried out individually in spaces close to the ordinary classroom in the month of October during school hours. Subsequently, the intervention programme was implemented in the experimental group, which lasted 25 sessions distributed over 6 weeks (4 sessions of 50 minutes for 5 weeks and 5 sessions in a subsequent session of equal duration). In the last term of the course in which the programme had already been fully applied, the assessment was once again carried out on all students using the same tools. The study respects the ethical values required in research with human beings (informed consent, right to information, protection of personal data, guarantees of confidentiality, non-discrimination, free of charge and having the possibility of leaving the programme in any of its phases). The research design contemplates the permits and ethical recommendations required by this type of studies and has the ethical permission of the educational institutions in which the study was carried out. Once the intervention was completed, the professionals in charge of all the participating groups were informed of the results obtained, providing them with the materials used so that they could continue the programme implemented for the improvement of reading learning during the next courses.

Intervention programme

The objective of the intervention programme was to explicitly develop phonological awareness, alphabetic knowledge and speed of naming, through the organization of the classroom in interactive groups with family involvement.

During the intervention period the students of the control group follow the same work programme as the experimental group, which aims to explicitly develop phonological awareness, alphabetic knowledge and the speed of naming, with the difference between both groups being the way the work programme was implemented. In the classroom of the control group the tutor follows traditional methodology: explanation to the class group of the lessons to be learnt, performance of a series of individual activities, ending with the correction of the work individually, a situation that is combined with other dynamics of cooperative work among the students themselves in small groups. On the other hand, the students belonging to the experimental group are distributed in several groups that receive the help of the family volunteers, so that each team incorporates a volunteer family member, who remains the same during the development of the entire programme. The work sessions of the experimental group are structured as follows: explanation of the contents to be worked on by the teacher to the class group, performance of a series of activities by the students in the work teams coordinated by a family member who, in addition to proposing the corresponding tasks reinforces the participation, collaboration and mutual help between the different classmates in order to ensure adequate learning by all members of the group, ending with a collective correction led by the teacher in order to assess the degree of acquisition of the work plan by the different students.

Five or six members of the class, coordinated by a family volunteer, form the groups. The volunteers were the students' parents and they were selected according to their availability, as well as the possibilities of attending the school in the morning, which was the time when the work programme was applied. The criteria for grouping the students was the same for the control and experimental groups and were characterized by addressing the heterogeneous nature of all the members of the group with respect to their academic level, to the development of their communicative capacity, to their social skills, to their leadership level, their interest and effort towards the

work, as well as the inclusion of both boys and girls in each of the groups. These groupings were organized by the tutors, due to the degree of knowledge they have of the students.

Family members received two training sessions prior to the development of the work plan, one in which the contents to be worked on were indicated, and another, in which they were offered guidance on how to carry out the class dynamics. At the end of each work session, a small assessment was made of its development, while the questions that arose in the session were resolved, guaranteeing the adequate development of the work plan. In addition, during the development of the work sessions the tutor observes and offers guidance to the volunteers in order to encourage the participation of all the students, while supervising the proper development of the work plan of the various family members.

The primordial characteristic throughout the process was to encourage dialogue based on personal reflections that the different classmates make based on the suggestions offered by both the teacher and the family members who coordinate the work groups, using certain cooperative dynamics such as, the rotating sheet of paper, pencils in the centre and numbered heads, which favour the increase of the interactions between the processes of oral language and reading, which in turn allows the expansion of expressive richness and the ideas on the learning of reading (Gutiérrez-Fresneda & Díez-Mediavilla, 2017; Gutiérrez-Fresneda & Verdú-Llorca, 2018).

For the implementation of the different sessions, a detailed dossier was given to each of the relatives in which the work plan was explained, which was focused on the explicit development of phonological awareness, alphabetical knowledge and speed of naming, programming that was the same as the control group.

Phonological awareness was worked on through playful proposals drawn from materials *Avanza* (Espejo, Gutiérrez, Llambés, & Vallejo, 2008) and *Avanzados* (Espejo, Gutiérrez, Llambés, & Vallejo, 2015) focused on identifying words based on the position of the initial and final syllable, substituting syllables in the words to form new ones, identifying images according to the positioning of the phonemes in the words, substituting and omitting phonemes in the words in different positions, etc.

For the learning of alphabetical knowledge, different spellings were presented along with words from the students' immediate surroundings, such as: names of classmates, everyday objects in the family, social and school context, titles and characters of children's stories, etc. together with the titles of the stories, images and content of the narrative texts were presented on the digital board, which were read using dialogical reading techniques, focusing attention on certain words, all with the purpose of encouraging decoding capacity, enhancing narrative awareness, encouraging verbal expressivity and the development of language. This type of dialogical reading is characterized by asking open questions, continuing to ask when responding so that more information is added, repeating what the student says, expanding the content, offering response models indicating what is correct, giving feedback and motivating the formulation of new questions (Gutiérrez, 2018).

Naming speed was exercised by means of templates of different images: numbers, letters, colours and objects related to the theme of the stories worked on. At the end of the joint reading of the story different images of the narrative text were presented on the digital board, which were to be quickly recalled by the students both individually and as a group with the purpose of promoting the development of the speed of phonological processing, as well as increasing lexical wealth.

Data analysis

Initially, a multivariate variance analysis (MANOVA) was performed with the total scores of the study tests to confirm the possible difference in the different variables between

the participants in the experimental group and the participants in the control group. Subsequently, to determine the effect of the programme, descriptive analyses (mean and standard deviation) and variance (ANOVA) were performed with each of the scores obtained for the instruments used during the previous phase. Then, once the homogeneity of the two groups was confirmed a priori, and to determine if the change was significantly different in the participants of the experimental group compared to the participants in the control group, a multivariate analysis of covariance (MANCOVA) was performed in the study variables. Finally, descriptive analysis and analysis of covariance were performed on the scores after the test in order to analyze the impact of the programme on each of the variables. In addition, the effect size (Cohen's *d*) was calculated (small < 0.50, moderate 0.50–0.79, large \geq 0.80).

Results

The results of the pre-test MANOVA for the set of variables reflect that before the intervention there were no significant differences between experimental and control groups, $F(1, 42) = 1.57$, $p > .05$. Similarly, the data obtained from the ANOVA in the pre-test phase show that before starting the intervention programme there were no statistically significant differences between the participants of the experimental and control groups in any of the variables studied. The MANCOVA results of the post-test–pre-test differences, using the pre-test scores as covariates, were significant $F(1, 42) = 2.53$, $p < .05$. These data indicate that the intervention programme has a significant effect. To analyze the change in each variable, descriptive and variance analyses were performed and the results are described below.

Changes in phonological awareness

In order to analyze the effectiveness of the programme in the development of phonological awareness, changes in the scores obtained in the CEEC Test were studied. The MANOVA pre-test does not show significant differences between the experimental and control groups, $F(1, 42) = 2.18$, $p > .05$, however, the results of the MANCOVA post-test–pre-test, $F(1, 42) = 1.86$, $p < .05$, confirm significant differences between both conditions. In the analysis of each variable independently, differences were obtained in *syllabic awareness* in which a greater increase was observed in the experimental group ($M = 0.83$, $SD = 0.35$) than in the control group ($M = 0.50$, $SD = 0.72$). The size of the effect was small ($d = 0.27$). In the *phonemic awareness* variable, higher increases in the experimental group was also achieved ($M = 1.07$, $SD = 0.42$) compared to those obtained by the control group ($M = .42$, $SD = 0.81$), with significant post-test–pre-test differences, $F(1, 42) = 4.58$, $p < .001$, and the moderate effect size ($d = 0.63$), which reflects an improvement in the ability to consciously handle the units of the words of the spoken language attributable to the intervention programme.

Changes in the speed of naming

To analyze the effectiveness of the programme in the development of naming speed, changes in the scores obtained in the RAN Test were studied. The MANOVA pre-test performed with the set of the four measured variables (name numbers, letters, colours and drawings) does not show the presence of significant differences in the pre-test phase between the experimental and control groups, $F(1, 42) = 2.53$, $p > .05$. However, significant differences were found in the MANOVA post-test–pre-test, $F(1, 42) = 2.86$, $p < .01$, as in the MANCOVA post-test–pre-test, $F(1, 42) = 2.64$, $p < .01$. As can be seen in Table 1, in the *number naming* variable, the experimental group obtained an increase ($M = 0.89$, $SD = 0.54$), higher than that achieved by the students in the control group ($M = 0.39$, $SD = 0.57$). The data of

Table 1

Means and standard deviations in phonological awareness, naming speed and alphabetic knowledge and results of analysis of variance and covariance for the experimental and control groups

Variables	Experimental Group (n = 160)								Control Group (n = 164)				Experimental-Control						
	Pretest		Posttest		Posttest-Pretest		Pretest		Posttest		Posttest-Pretest		Anova		Anova		Ancova		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F(1, 42)	d	F(1, 42)	d	F(1, 42)	d	
<i>PECO</i>																			
C. Syllabic	2.54	.47	3.37	.51	.83	.35	2.56	.45	3.06	.67	.50	.72	1.35	0.23	3.78*		2.34*	0.27	
C. Phonemic	2.41	.52	3.48	.37	1.07	.42	2.44	.38	2.86	.86	.42	.81	2.05	0.55	5.62***		4.58**	0.63	
<i>RAN</i>																			
Numbers	1.87	.45	2.76	.35	.89	.54	1.85	.43	2.24	.45	.39	.57	3.61	0.32	3.52**		3.37**	0.34	
Letters	1.82	.37	2.89	.64	1.07	.43	1.81	.51	2.26	.34	.45	.68	2.74	0.67	2.78**		5.68***	0.71	
Colours	2.01	.62	2.78	.37	.77	.27	2.03	.68	2.41	.28	.37	.52	2.18	0.46	6.19**		2.31**	0.53	
Drawings	2.09	.51	2.64	.53	.55	.46	2.12	.54	2.42	.61	.30	.41	3.06	0.29	4.36		1.26	0.32	
<i>BIL</i>																			
Word recognition	1.86	.53	2.68	.37	.82	.34	1.87	.35	2.26	.34	.39	.45	2.14	0.27	3.21**		4.37**	0.36	
Sentence recognition	1.75	.46	2.54	.42	.79	.45	1.77	.38	2.19	.25	.42	.32	1.68	0.41	4.37**		2.41**	0.46	
C. Alphabet	1.93	.52	2.88	.23	.95	.41	1.90	.51	2.23	.43	.33	.63	5.32	0.74	5.28**		5.48***	0.38	
<i>PROLEC-R</i>																			
Word reading	1.84	.45	2.74	.34	.90	.53	1.85	.41	2.06	.53	.21	.24	2.41	0.75	6.37***		7.28***	0.83	
Pseudoword reading	1.48	.36	2.12	.52	.64	.46	1.51	.73	1.73	.34	.22	.31	3.42	0.45	4.37**		5.48**	0.52	

* $p < .05$.** $p < .01$.*** $p < .001$.Effect size d = small < 0.50 ; moderate $0.50-0.79$; large ≥ 0.80 .

the ANCOVA of the post-test–pre-test differences shows significant results, $F(1, 42) = 3.37, p < .01$. The effect size was small ($d = 0.34$). In the *letter-naming* variable, a higher increase in the experimental group was also observed ($M = 1.07, SD = 0.43$) compared to those of the control group ($M = 0.45, SD = 0.68$), with moderate effect size ($d = 0.71$). In the variable *naming of colours*, higher increases were also observed in the experimental group ($M = 0.77, SD = 0.27$) compared to the control group ($M = 0.37, SD = 0.52$), with moderate effect size ($d = 0.53$). This shows an increase in the speed of naming as a result of the implementation of the intervention programme.

Changes in skills that facilitate access to reading

In order to evaluate the impact of the intervention programme on reading facilitation skills, the changes in the results obtained in the BIL Test were analyzed. The MANOVA pre-test performed with the set of four measured variables (recognizing words, recognizing phrases, reading functions and alphabetic knowledge) does not show the presence of significant differences in the pre-test phase between the experimental and control groups, $F(1, 42) = 3.24, p > .05$, similarly no differences were found in the MANCOVA post-test–pre-test $F(1, 42) = 2.18, p > .05$. In the analysis of each variable there are differences in the *recognition of words*, the experimental group show an improvement ($M = .82, SD = 0.34$), greater than that achieved by the control group ($M = 0.39, SD = 0.45$). The results of the ANCOVA with the post-test–pre-test differences indicate significant results, $F(1, 42) = 4.37, p < .01$. The size of the effect was small ($d = 0.36$). In the *phrase recognition* variable, higher marks in the experimental group are also observed ($M = 0.79, SD = 0.45$) compared to those of the control group ($M = 0.42, SD = 0.32$). The effect size was small ($d = 0.46$). There is also a significant improvement in the results of the experimental groups in *alphabetic knowledge*, with a large effect size ($d = 0.81$). These results show an improvement in the learning of alphabetic knowledge and the components of the written language attributable to the intervention programme.

Changes in the learning process of reading

Changes in the scores achieved in the PROLEC-R Test were analyzed to evaluate if the programme was effective in the development of the processes involved in reading learning. The pre-test MANOVA performed for all the variables of the test showed that there are no significant differences in the pre-test phase between the experimental and control groups, $F(1, 42) = 3.27, p > .05$. However, significant differences were found in the post-test–pre-test MANOVA, $F(1, 42) = 2.27, p < .01$, as in the MANCOVA post-test–pre-test, $F(1, 42) = 3.08, p < .01$. As can be seen in Table 1, in the word reading variable the experimental group obtained an improvement ($M = 0.90, SD = 0.53$), higher than that achieved by the control group ($M = 0.21, SD = 0.24$). The effect size was large ($d = 0.83$). Regarding the reading of pseudowords, as can be observed, there is a higher increase in the experimental groups ($M = 0.64, SD = 0.46$) compared to those of the control groups ($M = 0.22, SD = 0.31$), with moderate effect size ($d = 0.52$). These data point to an improvement in reading learning attributable to the intervention programme put into practice.

Discussion

The main aim of this study was to analyze the effect that the intervention of a programme focused on the development of pre-reading skills such as, phonological awareness, speed of naming and alphabetic knowledge presents on the learning of reading through the organization of the students into interactive groups, in which student family volunteers participate as facilitators of the work teams.

The results obtained make manifest that this type of instruction is effective to promote learning to read and constitutes a strategy of interest for educational improvement, so dialogical interaction, joint participation, mutual help and shared reflection, which occurs between different classmates when the schoolroom is organized into interactive groups, are effective measure for access to learning to read.

Similarly, these data expand the contributions that have been made on the relevance of parents in improving their children's reading, in that beyond the purpose of other studies focused on evidencing the importance of educational initiatives of families at home, since it favours the development of verbal skills, enriches vocabulary and increases interest in reading (Mora-Figueroa, Galán, & López-Jurado, 2016), in this study the relevance that family members can have in the process of acquiring reading if they participate as facilitators of interactive groups in collaboration with educational agents is made manifest.

Analysing the data collected, it is evident that the encouragement of interaction situations in which more attention is given to the students in the classroom, incorporating a greater number of educational agents, makes it possible to increase the attention to the students and respond more effectively to the educational needs during the process of appropriation of the written language, contributions that coincide with the affirmations of previous studies (Isaura et al., 2017).

This situation also facilitates the development of skills that favour phonological awareness, since, as has been observed, the members of the groups that participated in the intervention programme acquired a good control of the ability to become aware of the minimum units of the words: syllables and phonemes, especially of the latter in which the size of the effect found was moderate. These contributions coincide with the findings of other studies in which the importance of the development of phonological skills for the management and awareness of spoken language is verified (Gutiérrez, 2018; Suárez-Coalla, García de Castro, & Cuetos, 2013) especially when dynamics of interactive groups are implemented in the classroom (Gutiérrez-Fresneda, 2017).

As has been observed in the study, one of the factors that can contribute to the process of child literacy can be the promotion of situations of joint verbalization, both among equals and with adults in that they allow to intensify the development of the different components of the spoken language (Gutiérrez-Fresneda & Díez-Mediavilla, 2017). In this sense, the interactive groups are a pedagogical resource of great interest in the organization of work in the classroom for learning to read since they make it possible to intensify the learning process and offer a more personalized attention to all students with the interactions established among all the students. This fact is relevant since with the implementation of communicative dynamics we can compensate the deficiencies that many students present in lexical development in early ages, a situation that far from improving, remains in time as was proven in previous studies (Beck, McKeown, & Kucan, 2008).

Regarding the speed of naming, the students of the experimental group also obtained higher marks, specifically in the ability to recognize and name numbers, colours and letters; it is in these last facets where the results of the students participating in the intervention programme have a significant level, having a moderate effect size. This situation can be determined by the quick and shared evocation of the visual stimuli that is carried out jointly in the cooperative dynamics. These data coincide with the contributions of other studies which indicate that the speed of naming constitutes an important skill in the initial literacy process in early ages (Gómez-Velázquez, González-Garrido, Zarabozo, & Amano, 2010; González, Cuetos, Vilar, & Uceira, 2015), in addition to being a skill that allows predicting the acquisition of reading in subsequent courses (López-Escribano, Sánchez-Hípola, Suro, & Leal, 2014).

In the same way as the speed to name, phonological awareness was found to be an important predictor of reading (Bravo, Villalón, & Orellana, 2006; Suárez-Coalla et al., 2013), so the development of strategies aimed at improving the speed of naming of different known elements through playful situations, can be a very effective way to improve reading performance since they increase the interactions around reading activities.

Regarding the skills that facilitate access to reading, it has been proven that the students belonging to the experimental groups obtain better results in the recognition of words, phrases and alphabetic knowledge, especially in the latter in which the effect size found was great. From this we can interpret that explicit intervention in the phonological skills together with dynamics centred in the fast naming in combination with practices of shared reading improves the learning of the correspondences phoneme-grapheme, as well as the mastery of the decoding processes.

With regards to the learning processes of reading, the students participating in the interactive group improve in the different facets related to the reading of both words and pseudowords, which reflects their progress in phonological, orthographic processing and in accessing the representation of words quickly and accurately.

This pattern of results corresponds to reading models that defend a relationship between the developments of pre-selection skills and decoding processes (González et al., 2015; González, López, Vilar, & Rodríguez, 2013; Gutiérrez-Fresneda & Díez-Mediavilla, 2017).

In summary, based on the results of this study and given the repercussions that reading difficulties present in the school development of students, at a practical level the design of programmes aimed at the development of pre-literacy skills at the beginning of schooling are suggested, using didactic proposals in which learners work with the help of family collaboration in interactive groups using cooperative techniques that favour lexical development, thinking aloud, dialogic communication, personal and collective reflection and in which personal contributions are valued since they constitute an effective means in the process of acquisition of reading. One limitation that would be interesting to consider in future studies is to analyze if the effect of the intervention is produced by the creation of interactive groups, by family collaboration, or by the existence of an educational agent, even if it is not a family member of the students, aspects that can also be interesting to favour the initial process of reading learning.

References

- Álvarez, C., & Puigdemílvoll, I. (2014). Cuando la comunidad entra en la escuela: Un estudio de casos sobre los grupos interactivos, valorados por sus protagonistas. *Profesorado*, 18(3), 239–253.
- Azpíllaga, V., Intxausti, N., & Joaristi, L. (2014). Implicación de las familias en los centros escolares de alta eficacia en la Comunidad Autónoma Vasca. *Bordón*, 66(3), 27–37.
- Beck, I. L., McKeown, M. G., & Kucan, L. (2008). *Creating robust vocabulary: Frequently asked questions and extended examples*. New York, NY: The Guilford Press.
- Bravo, L., Villalón, M., & Orellana, E. (2006). Diferencias en la predictividad de la lectura entre primer año y cuarto año básicos. *Psyke*, 15, 3–11.
- Catts, H. W., Fey, M. E., Tomblin, J. B., & Zhang, X. (2002). A longitudinal investigation of reading outcomes in children with language impairments. *Journal of Speech, Language, and Hearing Research*, 45(6), 1142–1157.
- Compton, D. (2000). Modelling the growth of decoding skills in first-grade children. *Scientific Studies of Reading*, 4, 219–259.
- Cuetos, F., Rodríguez, B., Ruano, E., & Arribas, D. (2007). *PROLEC-R, batería de evaluación de los procesos lectores, revisada*. Madrid: TEA.
- Elboj, C., & Niemelä, R. (2010). Sub-communities of mutual learners in the classroom: The case of Interactive Groups. *Revista de Psicodidáctica*, 15(2), 177–189. <http://dx.doi.org/10.1387/RevPsicodidact.810>
- Espejo, P., Gutiérrez, R., Llambés, D., & Vallejo, B. (2008). *Avanza: programa para el desarrollo de las habilidades escolares básicas. Habilidades fonológicas I*. Alicante: ECU.
- Espejo, P., Gutiérrez, R., Llambés, D., & Vallejo, B. (2015). *Avanzados: programa para el desarrollo de las habilidades escolares básicas. Habilidades fonológicas II*. Alicante: ECU.
- Fernández, A. L., & Lamas, L. (2018). Elaboración del test de velocidad de denominación para niños hispanohablantes: propiedades psicométricas y datos normativos. *Revista Neuropsicología Latinoamericana*, 10(2), 42–50.
- Flecha, R., & Soler, M. (2013). Turning difficulties into possibilities: Engaging Roma families and students in school through dialogic learning. *Cambridge Journal of Education*, 43(4), 451–465.
- Fuentes, M. C., García, F., Gracia, E., & Alarcón, A. (2015). Los estilos parentales de socialización y el ajuste psicológico. Un estudio con adolescentes españoles. *Revista de Psicodidáctica*, 20(1), 117–138. <http://dx.doi.org/10.1387/RevPsicodidact.10876>
- Gómez-Velázquez, F., González-Garrido, A., Zarabozo, D., & Amano, M. (2010). La velocidad de denominación de letras. El mejor predictor temprano del desarrollo lector en español. *Revista Mexicana de Investigación Educativa*, 15(46), 823–847.
- González, R. M., López, S., Cuetos, F., & Vilar, J. (2017). Efectos del entrenamiento en conciencia fonológica y velocidad de denominación sobre la lectura. Un estudio longitudinal. *Estudios sobre Educación*, 32, 155–177. <http://dx.doi.org/10.15581/004.32.155-177>
- González, R. M., López, S., Vilar, J., & Rodríguez, A. (2013). Estudio de los predictores de la lectura. *Revista de Investigación en Educación*, 11(2), 98–110.
- González, R. M., Cuetos, F., Vilar, J., & yUceira, E. (2015). Efectos de la intervención en conciencia fonológica y velocidad de denominación sobre el aprendizaje de la escritura. *Aula Abierta*, 43, 1–8.
- Gutiérrez, R. (2018). Efectos de la lectura compartida y la conciencia fonológica para la mejora del aprendizaje lector. *Revista Complutense de Educación*, 29(2), 441–454. <https://doi.org/10.5209/RCED.52790>
- Gutiérrez-Fresneda, R. (2017). Efectos de la comunicación dialógica y la conciencia fonológica en el aprendizaje inicial de la escritura de palabras en español. *Revista Onomázein*, 37, 170–187.
- Gutiérrez-Fresneda, R., & Díez-Mediavilla, A. (2017). Efectos de la comunicación dialógica en la mejora de la composición escrita en estudiantes de Primaria. Teoría de la educación. *Revista Interuniversitaria*, 29(2), 41–59. <http://dx.doi.org/10.14201/teoredu2924159>
- Gutiérrez-Fresneda, R., & Verdú-Llorca, V. (2018). Aprendizaje individual, colaborativo y cooperativo, ¿cómo valoran los estudiantes estas metodologías? En R. Roig-Vila (Ed.), *El compromiso académico y social a través de la investigación e innovación educativas en la enseñanza superior* (pp. 951–957). Barcelona: Octaedro.
- Hargrave, A. C., & Sénéchal, M. (2000). Book reading interventions with language-delayed preschool children: The benefits of regular reading and dialogic reading. *Early Childhood Research Quarterly*, 15, 75–90.
- Hindman, A., Skibbe, L., & Foster, T. (2014). Exploring the variety of parental talk during shared book reading and its contributions to preschool language and literacy: Evidence from the early childhood longitudinal study-birth cohort. *Reading and Writing*, 27(2), 287–313.
- Isaura, Y., Carrera, C., & Madrigal, J. (2017). La escritura en los líderes educativos; experiencia en comunidad de aprendizaje. Modelo ABCD alternativa de educación de calidad para comunidades marginadas. *Boletín Redipe*, 6. Available in: <http://revista.redipe.org/index.php/1/article/view/388/385>.
- Lever, R., & Sénéchal, M. (2011). Discussing stories: How a dialogic reading intervention improves kindergarteners' oral narrative construction. *Journal of Experimental Child Psychology*, 108, 1–24. <http://dx.doi.org/10.1016/j.jecp.2010.07.002>
- López-Escribano, C., Sánchez-Hípola, P., Suro, J., & Leal, F. (2014). Análisis comparativo de estudios sobre la velocidad de nombrar en español y su relación con la adquisición de la lectura y sus dificultades. *Universitas Psychologica*, 13(2), 757–769. <https://doi.org/10.11144/javeriana.UPSY13-2.aces>.
- Melgar, P. (2015). Grupos interactivos en educación infantil: Primer paso para el éxito educativo. *Intangible Capital*, 11(3), 316–332. <http://dx.doi.org/10.3926/ic.658>
- Mora-Figueroa, J., Galán, A., & López-Jurado, M. (2016). Eficacia de un programa de implicación familiar en la lectura del alumnado en 1.º de Educación Primaria. *Revista de Psicodidáctica*, 21(2), 375–391. <https://doi.org/10.1387/RevPsicodidact.14889>
- Paratore, J. R., & Yarden, D. B. (2011). Family literacy on the defensive: The defunding of even start — omen or opportunity? In D. Lapp, & D. Fisher (Eds.), *Handbook of research on teaching the english language arts*. New York: Routledge.
- Peirats, J., & López, M. (2013). Los grupos interactivos como estrategia didáctica en la atención a la diversidad. *Revista de la Facultad de Educación de Albacete*, 28, 12–19.
- Ramos, J. L., & Cuadrado, I. (2006). *Prueba para la evaluación del conocimiento fonológico. PECCO*. Madrid: EOS.
- Sellés, P., & Martínez, T. (2008). Evaluación de los predictores y facilitadores de la lectura. *Bordón*, 60(3), 113–212.
- Sellés, P., Martínez, T., Vidal-Abarca, E., & Gilabert, R. (2008). *BIL 3-6. Batería de inicio a la lectura*. Madrid: ICCE, Instituto de Ciencias de la Educación.
- Sénéchal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading*, 10, 59–87.
- Suárez-Coalla, P., García de Castro, M., & Cuetos, F. (2013). Variables predictoras de la lectura y la escritura en castellano. *Infancia y Aprendizaje*, 36(1), 77–89. <http://dx.doi.org/10.1174/021037013804826537>
- Sukhram, D. P., & Hsu, A. (2012). Developing reading partnerships between parents and children: A reflection on the reading together program. *Early Childhood Education Journal*, 40, 115–121. <http://dx.doi.org/10.1007/s10643-011-0500-y>
- Wolf, M., & Denckla, M. (2003). *Rapid automatized naming tests*. Greenville, SC: Super Duper.