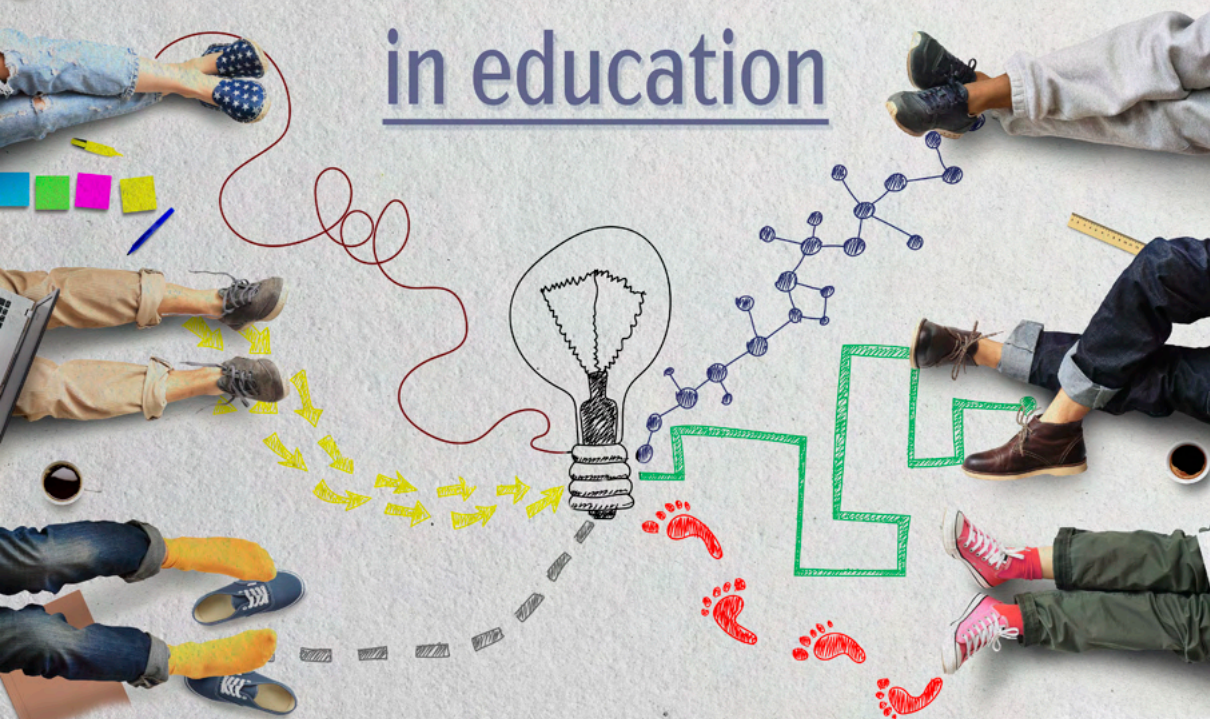


DISCOURSES, PRACTICES AND IDEAS

in education

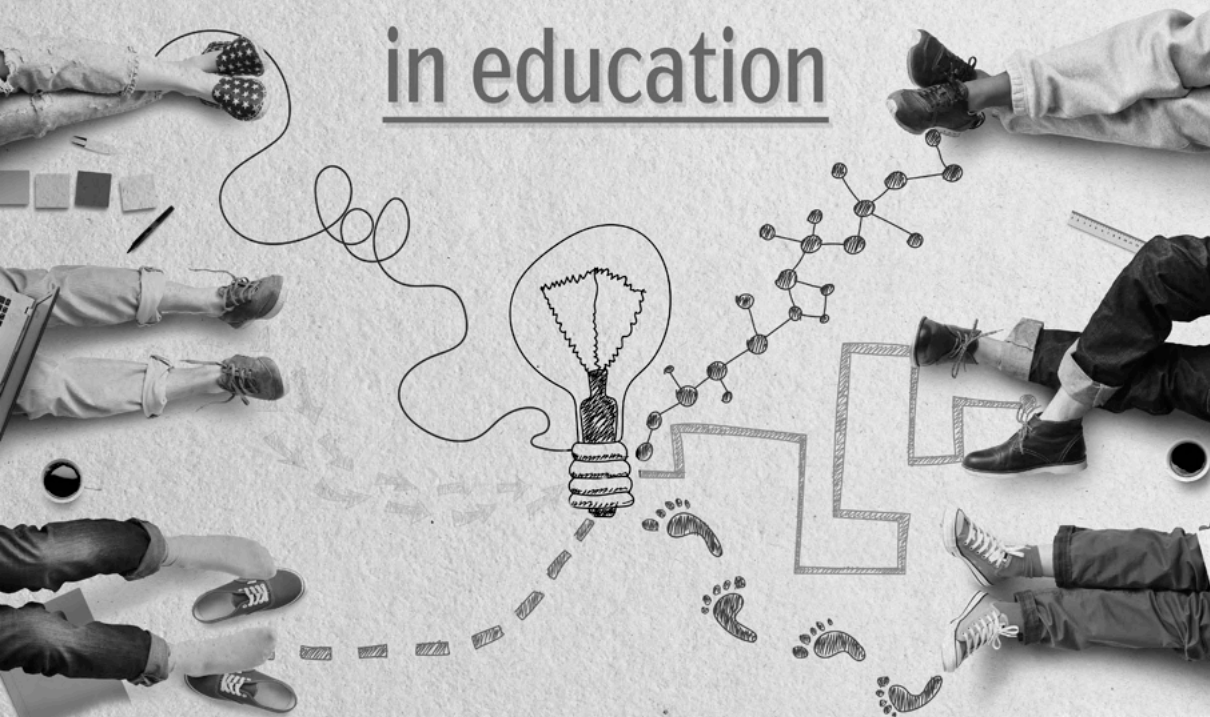


Adaylson Wagner Sousa de Vasconcelos
(Organizador)

Atena
Editora
Ano 2022

DISCOURSES, PRACTICES AND IDEAS

in education



Adaylson Wagner Sousa de Vasconcelos
(Organizador)

Atena
Editora
Ano 2022

Editora chefe

Profª Drª Antonella Carvalho de Oliveira

Editora executiva

Natalia Oliveira

Assistente editorial

Flávia Roberta Barão

Bibliotecária

Janaina Ramos

Projeto gráfico

Camila Alves de Cremo

Daphynny Pamplona

Gabriel Motomu Teshima

Luiza Alves Batista

Natália Sandrini de Azevedo

Imagens da capa

iStock

Edição de arte

Luiza Alves Batista

2022 by Atena Editora

Copyright © Atena Editora

Copyright do texto © 2022 Os autores

Copyright da edição © 2022 Atena Editora

Direitos para esta edição cedidos à Atena Editora pelos autores.

Open access publication by Atena Editora



Todo o conteúdo deste livro está licenciado sob uma Licença de Atribuição *Creative Commons*. Atribuição-Não-Comercial-NãoDerivativos 4.0 Internacional (CC BY-NC-ND 4.0).

O conteúdo dos artigos e seus dados em sua forma, correção e confiabilidade são de responsabilidade exclusiva dos autores, inclusive não representam necessariamente a posição oficial da Atena Editora. Permitido o *download* da obra e o compartilhamento desde que sejam atribuídos créditos aos autores, mas sem a possibilidade de alterá-la de nenhuma forma ou utilizá-la para fins comerciais.

Todos os manuscritos foram previamente submetidos à avaliação cega pelos pares, membros do Conselho Editorial desta Editora, tendo sido aprovados para a publicação com base em critérios de neutralidade e imparcialidade acadêmica.

A Atena Editora é comprometida em garantir a integridade editorial em todas as etapas do processo de publicação, evitando plágio, dados ou resultados fraudulentos e impedindo que interesses financeiros comprometam os padrões éticos da publicação. Situações suspeitas de má conduta científica serão investigadas sob o mais alto padrão de rigor acadêmico e ético.

Conselho Editorial**Ciências Humanas e Sociais Aplicadas**

Prof. Dr. Adilson Tadeu Basquerote Silva – Universidade para o Desenvolvimento do Alto Vale do Itajaí

Prof. Dr. Alexandre de Freitas Carneiro – Universidade Federal de Rondônia

Prof. Dr. Alexandre Jose Schumacher – Instituto Federal de Educação, Ciência e Tecnologia do Paraná

Prof. Dr. Américo Junior Nunes da Silva – Universidade do Estado da Bahia

Profª Drª Ana Maria Aguiar Frias – Universidade de Évora

Profª Drª Andréa Cristina Marques de Araújo – Universidade Fernando Pessoa



Prof. Dr. Antonio Carlos da Silva – Universidade Católica do Salvador
Prof. Dr. Antonio Carlos Frasson – Universidade Tecnológica Federal do Paraná
Prof. Dr. Antonio Gasparetto Júnior – Instituto Federal do Sudeste de Minas Gerais
Prof. Dr. Antonio Isidro-Filho – Universidade de Brasília
Prof. Dr. Arnaldo Oliveira Souza Júnior – Universidade Federal do Piauí
Prof. Dr. Carlos Antonio de Souza Moraes – Universidade Federal Fluminense
Prof. Dr. Crisóstomo Lima do Nascimento – Universidade Federal Fluminense
Prof^o Dr^a Cristina Gaio – Universidade de Lisboa
Prof. Dr. Daniel Richard Sant’Ana – Universidade de Brasília
Prof. Dr. Deyvison de Lima Oliveira – Universidade Federal de Rondônia
Prof^o Dr^a Dilma Antunes Silva – Universidade Federal de São Paulo
Prof. Dr. Edvaldo Antunes de Farias – Universidade Estácio de Sá
Prof. Dr. Elson Ferreira Costa – Universidade do Estado do Pará
Prof. Dr. Eloi Martins Senhora – Universidade Federal de Roraima
Prof. Dr. Gustavo Henrique Cepolini Ferreira – Universidade Estadual de Montes Claros
Prof. Dr. Humberto Costa – Universidade Federal do Paraná
Prof^o Dr^a Ivone Goulart Lopes – Istituto Internazionele delle Figlie de Maria Ausiliatrice
Prof. Dr. Jadilson Marinho da Silva – Secretaria de Educação de Pernambuco
Prof. Dr. Jadson Correia de Oliveira – Universidade Católica do Salvador
Prof. Dr. José Luis Montesillo-Cedillo – Universidad Autónoma del Estado de México
Prof. Dr. Julio Candido de Meirelles Junior – Universidade Federal Fluminense
Prof. Dr. Kárpio Márcio de Siqueira – Universidade do Estado da Bahia
Prof^o Dr^a Keyla Christina Almeida Portela – Instituto Federal do Paraná
Prof^o Dr^a Lina Maria Gonçalves – Universidade Federal do Tocantins
Prof^o Dr^a Lucicleia Barreto Queiroz – Universidade Federal do Acre
Prof. Dr. Luis Ricardo Fernandes da Costa – Universidade Estadual de Montes Claros
Prof. Dr. Lucio Marques Vieira Souza – Universidade do Estado de Minas Gerais
Prof^o Dr^a Natiéli Piovesan – Instituto Federal do Rio Grande do Norte
Prof^o Dr^a Marianne Sousa Barbosa – Universidade Federal de Campina Grande
Prof. Dr. Marcelo Pereira da Silva – Pontifícia Universidade Católica de Campinas
Prof^o Dr^a Maria Luzia da Silva Santana – Universidade Federal de Mato Grosso do Sul
Prof. Dr. Miguel Rodrigues Netto – Universidade do Estado de Mato Grosso
Prof. Dr. Pedro Henrique Máximo Pereira – Universidade Estadual de Goiás
Prof. Dr. Pablo Ricardo de Lima Falcão – Universidade de Pernambuco
Prof^o Dr^a Paola Andressa Scortegagna – Universidade Estadual de Ponta Grossa
Prof^o Dr^a Rita de Cássia da Silva Oliveira – Universidade Estadual de Ponta Grossa
Prof. Dr. Rui Maia Diamantino – Universidade Salvador
Prof. Dr. Saulo Cerqueira de Aguiar Soares – Universidade Federal do Piauí
Prof. Dr. Urandi João Rodrigues Junior – Universidade Federal do Oeste do Pará
Prof^o Dr^a Vanessa Bordin Viera – Universidade Federal de Campina Grande
Prof^o Dr^a Vanessa Ribeiro Simon Cavalcanti – Universidade Católica do Salvador
Prof. Dr. William Cleber Domingues Silva – Universidade Federal Rural do Rio de Janeiro
Prof. Dr. Willian Douglas Guilherme – Universidade Federal do Tocantins



Discourses, practices, and ideas in education

Diagramação: Camila Alves de Cremo
Correção: Yaiddy Paola Martinez
Indexação: Amanda Kelly da Costa Veiga
Revisão: Os autores
Organizador: Adaylson Wagner Sousa de Vasconcelos

Dados Internacionais de Catalogação na Publicação (CIP)

D611 Discourses, practices, and ideas in education / Organizador
Adaylson Wagner Sousa de Vasconcelos. - Ponta
Grossa - PR: Atena, 2022.

Formato: PDF

Requisitos de sistema: Adobe Acrobat Reader

Modo de acesso: World Wide Web

Inclui bibliografia

ISBN 978-65-5983-959-9

DOI: <https://doi.org/10.22533/at.ed.599221502>

1. Educação. I. Vasconcelos, Adaylson Wagner Sousa
de (Organizador). II. Título.

CDD 370

Elaborado por Bibliotecária Janaina Ramos - CRB-8/9166

Atena Editora

Ponta Grossa - Paraná - Brasil

Telefone: +55 (42) 3323-5493

www.atenaeditora.com.br

contato@atenaeditora.com.br



Atena
Editora
Ano 2022

DECLARAÇÃO DOS AUTORES

Os autores desta obra: 1. Atestam não possuir qualquer interesse comercial que constitua um conflito de interesses em relação ao artigo científico publicado; 2. Declaram que participaram ativamente da construção dos respectivos manuscritos, preferencialmente na: a) Concepção do estudo, e/ou aquisição de dados, e/ou análise e interpretação de dados; b) Elaboração do artigo ou revisão com vistas a tornar o material intelectualmente relevante; c) Aprovação final do manuscrito para submissão.; 3. Certificam que os artigos científicos publicados estão completamente isentos de dados e/ou resultados fraudulentos; 4. Confirmam a citação e a referência correta de todos os dados e de interpretações de dados de outras pesquisas; 5. Reconhecem terem informado todas as fontes de financiamento recebidas para a consecução da pesquisa; 6. Autorizam a edição da obra, que incluem os registros de ficha catalográfica, ISBN, DOI e demais indexadores, projeto visual e criação de capa, diagramação de miolo, assim como lançamento e divulgação da mesma conforme critérios da Atena Editora.



DECLARAÇÃO DA EDITORA

A Atena Editora declara, para os devidos fins de direito, que: 1. A presente publicação constitui apenas transferência temporária dos direitos autorais, direito sobre a publicação, inclusive não constitui responsabilidade solidária na criação dos manuscritos publicados, nos termos previstos na Lei sobre direitos autorais (Lei 9610/98), no art. 184 do Código penal e no art. 927 do Código Civil; 2. Autoriza e incentiva os autores a assinarem contratos com repositórios institucionais, com fins exclusivos de divulgação da obra, desde que com o devido reconhecimento de autoria e edição e sem qualquer finalidade comercial; 3. Todos os e-book são *open access*, *desta forma* não os comercializa em seu site, sites parceiros, plataformas de *e-commerce*, ou qualquer outro meio virtual ou físico, portanto, está isenta de repasses de direitos autorais aos autores; 4. Todos os membros do conselho editorial são doutores e vinculados a instituições de ensino superior públicas, conforme recomendação da CAPES para obtenção do Qualis livro; 5. Não cede, comercializa ou autoriza a utilização dos nomes e e-mails dos autores, bem como nenhum outro dado dos mesmos, para qualquer finalidade que não o escopo da divulgação desta obra.



APRESENTAÇÃO

Em **DISCOURSES, PRACTICES AND IDEAS IN EDUCATION**, coletânea de nove capítulos que une pesquisadores de diversas instituições, congregamos discussões e temáticas que circundam a grande área da Educação e dos diálogos possíveis de serem realizados com as demais áreas do saber.

Temos, no presente volume, reflexões que explicitam essas interações. Nelas estão debates que circundam arte, justiça social, ensino infantil, lúdico, evasão escolar, políticas públicas, marco legal, pós-pandemia, ensino superior, tendências investigativas e criatividade.

Assim sendo, convidamos todos os leitores para exercitar diálogos com os estudos aqui contemplados.

Tenham proveitosas leituras!


Adaylson Wagner Sousa de Vasconcelos

SUMÁRIO

CAPÍTULO 1..... 1

ARTE Y COEDUCACIÓN PARA LA JUSTICIA SOCIAL. IMPLICACIÓN DE FUTUROS MAESTROS DE GRADO DE INFANTIL EN UN PROYECTO COLABORATIVO INCLUSIVO


David Mascarell Palau

 <https://doi.org/10.22533/at.ed.5992215021>

CAPÍTULO 2..... 14

O LÚDICO NO CONTEXTO ESCOLAR: O BRINCAR ENQUANTO FERRAMENTA NO PROCESSO EDUCACIONAL


Antônia Silva de Souza

 <https://doi.org/10.22533/at.ed.5992215022>

CAPÍTULO 3..... 28

A EVASÃO ESCOLAR NA EDUCAÇÃO DE JOVENS E ADULTOS (EJA): PROBLEMATIZAÇÃO ACERCA DE UMA REALIDADE NACIONAL


Francilene do Carmo Alexandre Batista

 <https://doi.org/10.22533/at.ed.5992215023>

CAPÍTULO 4..... 41

POLÍTICAS PÚBLICAS E A FORMAÇÃO DE PROFESSORES PARA A EDUCAÇÃO INFANTIL: IMPASSES E PERSPECTIVAS

Elizanete Nascimento Gomes da Silva


 <https://doi.org/10.22533/at.ed.5992215024>

CAPÍTULO 5..... 55

MARCOS LEGAIS PARA O RETORNO ÀS AULAS COM SEGURANÇA PÓS PANDEMIA DA COVID-19 FRENTE À AFETIVIDADE COMO CONDIÇÃO DE APRENDIZAGEM

Elen Carolina Martins

Mary Diana da Silva Miranda Rodrigues


 <https://doi.org/10.22533/at.ed.5992215025>

CAPÍTULO 6..... 67

O ENSINO E O APRENDIZADO DO TELETJORNALISMO NO CURSO DE COMUNICAÇÃO SOCIAL DA UESPI DE PICOS-PI

Clebson Lustosa Brandão Lima

Samantha Viana Castelo Branco Rocha Carvalho

 <https://doi.org/10.22533/at.ed.5992215026>

CAPÍTULO 7..... 82


ANÁLISIS DE LAS TENDENCIAS INVESTIGATIVAS EN TRABAJOS DE GRADO DE MAESTRÍA

Martha Cecilia Arbeláez Gómez

Clara Lucía Lanza Sierra

Martha Lucía Garzón Osorio

Luz Stella Montoya Alzate
Karen Hasleidy Machado Mena


 <https://doi.org/10.22533/at.ed.5992215027>

CAPÍTULO 8..... 108

**CRIATIVIDADE PARA INOVAR: UMA EXPERIÊNCIA INOVADORA NO CAMPO
PROFISSIONAL DA BELEZA**

Maria Mônica Pinheiro-Cavalcanti

Luciana de Oliveira Campolina

 <https://doi.org/10.22533/at.ed.5992215028>

CAPÍTULO 9..... 117

**READING ACQUISITION SOFTWARE FOR PORTUGUESE SPEAKING CHILDREN:
PORTUGUESE FOUNDATION GRAPHOGAME**


Ana Sucena

Ana Filipa Silva

Cátia Marques

Cristina Garrido

Fernanda Leopoldina Viana

 <https://doi.org/10.22533/at.ed.5992215029>

SOBRE O ORGANIZADOR 124

ÍNDICE REMISSIVO..... 125

READING ACQUISITION SOFTWARE FOR PORTUGUESE SPEAKING CHILDREN: PORTUGUESE FOUNDATION GRAPHOGAME

Data de aceite: 01/02/2022

Ana Sucena

Instituto Politécnico do Porto
Centro de Investigação e Intervenção na
Leitura
Centro de Investigação em Estudos da Criança
Portugal

Ana Filipa Silva

Instituto Politécnico do Porto
Centro de Investigação e Intervenção na
Leitura
Portugal

Cátia Marques

Instituto Politécnico do Porto
Centro de Investigação e Intervenção na
Leitura
Portugal

Cristina Garrido

Instituto Politécnico do Porto
Centro de Investigação e Intervenção na
Leitura
Portugal

Fernanda Leopoldina Viana

Centro de Investigação em Estudos da Criança
Portugal

ABSTRACT: Several studies indicate Graphogame as an effective tool on reading and spelling acquisition. Graphogame has been designed and implemented in different languages. The Portuguese Foundation Graphogame is an adaptation of the Graphogame

software to European Portuguese. In this study, the Portuguese Foundation Graphogame is described and the impact on foundation reading skills is assessed. Results indicate an increase on all foundation skills after training. It is concluded that early qualified, continuous and systematic training in a playful environment does impact positively on reducing reading difficulties.

KEYWORDS: Graphogame; reading acquisition; word reading; spelling training.

RESUMO: Vários estudos indicam que o Graphogame é uma ferramenta eficaz para a aquisição de leitura e escrita. Este tem vindo a ser desenhado e implementado em diferentes línguas. O Graphogame português é uma adaptação do *software* Graphogame para o português europeu. Neste estudo é descrito o Graphogame português e avaliado o impacto na aquisição das competências leitoras. Os resultados indicam um aumento nestas competências após o treino com este *software*. Conclui-se que o treino precoce qualificado, contínuo e sistemático em ambiente lúdico parece ter efeito na redução das dificuldades de leitura e escrita.

PALAVRAS-CHAVE: Graphogame; aquisição de leitura; leitura de palavras, treino ortográfico.

It is unanimous that reading and spelling acquisition benefits from explicit instruction (Squires & Wolter, 2016). Recently, however, some results indicate that explicit instruction may not be sufficient, particularly regarding inconsistent Portuguese Foundation

Graphogame (PFG) that depend on implicit cues (Sucena et al., 2009). For the child to develop sensibility to implicit cues an explicit and systematic instruction is crucial. Reading and spelling acquisition should not only include explicit statement of orthographic rules but also massive repetition of similar PGC, in order for the child to become implicitly aware of not only orthographic rules but also most importantly orthographic statistical tendencies.

Educational software has been considered a highly valuable resource for children experiencing reading and spelling acquisition difficulties, as it has the potential to adapt to each individual learning rhythm. The Graphogame software was developed to promote reading and spelling acquisition. It was developed as a friendly computer game, focusing on the training of grapheme-phoneme relationships with children at risk of experiencing difficulties on reading acquisition. In order to be effective, intervention should be playful, motivating, challenging and reinforcing, all characteristics that were observed when developing Graphogame. Graphogame was developed at the University of Jyväskylä (Finland) aiming to be a complementary and free tool to regular education (Lyytinen et al., 2007; Lyytinen et al., 2009). When playing Graphogame children listen to a sound corresponding to a letter (or word /nonword, in more advanced levels) and, at the same time, several written options appear on the screen. The child's task is to select the correct match to the sound she has heard. The game presents the same stimuli hundreds of times, at different playing levels and through different tasks. In addition, during the game, the child has to make quick phoneme-grapheme associations thus promoting reading automation. There are two types of tasks: the main tasks require the child to associate an audio segment to the correct written representation; more active tasks require the child to spell the word or nonword she has heard.

The Graphogame has been adapted in various languages (e.g., English, German, Finnish) with results indicating this software as an effective tool for promoting reading and spelling acquisition (Sucena et al., 2016). Saine et al., (2011) administered Graphogame to Finnish children identified as at risk of developing difficulties in reading acquisition. After the intervention there was a significant progress regarding letter-sound knowledge, reading and spelling skills (Saine et al., 2011). In addition, about sixteen months after the intervention, their reading and spelling accuracy and fluency skills remained similar to the rest of the classroom. In Austria, a six weeks intervention using the German Graphogame improved the reading accuracy and speed of second and fourth graders (Huemer, 2008). In the UK, after twelve weeks of intervention, children with ages 6–7 improved on reading, spelling and phonological skills, maintaining the gains four months after the intervention (Kyle et al., 2013).

The PFG study was conducted with a group of first graders identified as at risk of failure in reading acquisition. The Graphogame training was conducted within school context with groups of five children, ten minutes a day, five days a week, under the supervision of a specially prepared professional (speech therapist, psychologist or teacher). The aim of

the study was to assess the impact of PFG on the reading foundation skills, specifically: phonemic awareness, letter sound knowledge, and decoding. Our expectation for the results of the intervention group was (i) to find a more pronounced learning curve than for the comparative group, (ii) the extinction or decrease of the economically deprivation effect, and (iii) a steady motivation throughout the training to play the PFG.

METHOD

Participants

Thirty-eight monolingual first grade native speakers of European Portuguese took part in this study (Table 1). Children were selected for being at risk of experiencing reading difficulties. Participants were divided between intervention and comparative group. In both groups the socioeconomic context was controlled by selecting children from economically deprived school areas (ED) and children from non-economically deprived school areas (NED).

Characteristics	Comparative Group		Intervention Group	
	ED	NED	ED	NED
<i>n</i>	15	10	8	5
Sex (F;M)	5;10	6;4	2;6	2;3
Age (years; months)	7;0	6;5	6;7	6;7
IQ *	17.4	18.2	15.9	20.6
Playing time(minutes)	----	----	451	474
Percentage of success	----	----	75.1%	78.9%

* Results fall between percentiles 35-65, corresponding to “average intellectual ability” (Simões et al., 2003)

Table 1 - Participants description by type of group, school area economical context and sex

Procedures of data collection

Authorizations were obtained from the school board and parents. The objectives of the assessment were presented to both the school board and parents, and the confidentiality of the data processing was guaranteed. Participants were administered the assessment tasks individually before the beginning of the intervention (pre-test M1, February) – and by the end of sixteen weeks of intervention (post-test M2, June). On both occasions, the evaluations were conducted individually in a room adjacent to the classroom. Children in the

intervention group PFG played PFG, whereas children in the comparative group followed the normal schooling.

Procedure of data analysis

Statistical analyses were performed through the *Statistical Package for the Social Sciences* (SPSS IBM) for *Windows*, version 25.0. A t - test was conducted to analyze the group and time effect on the assessment dimensions. Before running this statistical test, we verified the fulfilment assumptions. The statistical assumption of normality of sampling distribution of scale variables was previously verified, using the Kolmogorov-Smirnov and the Shapiro-Wilk tests. Evidence of non-normality was obtained, whereby results from parametric and non-parametric tests were compared. Results from non-parametric and parametric tests led to the same conclusions regarding the retention versus rejection of the null hypotheses. For this reason, results from parametric tests (i.e., t-test) were reported in this manuscript (Martins, 2011).

Instruments

Demographic variables were collected with the collaboration of the school staff. The letter-sound knowledge was assessed with a task integrated in the PFG. In the letter-sound knowledge task of the PFG, the child is asked to select from different stimulus the correct answer. The Letter spelling, Phonemic awareness, Word and Pseudoword Reading were conducted using the ALEPE (Portuguese acronym for *Bateria de Avaliação da Leitura em Português Europeu*, in English - European Portuguese Reading Assessment battery, Sucena & Castro, 2011).

In the Letter Spelling Subtest the child is asked to spell letters dictated by the examiner (in lowercase format). This subtest consists of two training items and twenty-three experimental items. The total result equals the total number of accurately spelled letters. The cutoff value for first graders for writing letters is 93%.

The phonemic awareness was evaluated through the Subtest of Initial Phoneme Metalinguistic Phonological Awareness, which consists of identifying the common phoneme in a couple of words. This subtest contains three training items and twelve experimental items. Each item consists of a pair of words, with two syllabic structures, namely CV [Consonant-Vowel (open syllable) + CVC [Consonant-Vowel-Consonant (close syllable)]. The result is the total of correct answers. The cutoff value for the Subtest of Initial Phoneme Metalinguistic Phonological Awareness for the first grade is 80%.

Word and pseudoword Reading tasks of ALEPE (Sucena & Castro, 2011) were adopted to assess the decoding process. The child is required to read a list of words/pseudowords that are presented one-by-one on a computer screen, each for a maximum of 10 seconds. The stimuli list for first grade consists of four training items and eighteen experimental items. The items are composed of orthographically simple, consistent and inconsistent items for words, and simple and consistent items for pseudowords. The cutoff

value for the first grade is 57.5% for word naming and 50.8% for pseudowords. Cronbach's alphas for the ALEPE words/pseudowords scales ranged between .46 to first graders and .72 to 2nd, 3rd and 4th 157 graders 158 (Sucena & Castro, 2011).

RESULTS

The results of the PFG training are shown in Table 2.

Tasks	Assessment	Comparative Group		Intervention Group	
		ED	NED	ED	NED
Letter-sound knowledge	M1	44.4	66.4	53.7	57.1
	M2	64.1	69.7	74.9	82.9
Letter spelling	M1	47.3	73.9	50.4	58.7
	M2	68.5	85.2	89.6	91.3
Phonemic awareness	M1	31.3	36.7	29.4	34.2
	M2	60.4	53.3	83.3	84.2
Word reading	M1	6.3	16.7	4.1	18.3
	M2	17.4	50	32.2	51.1
Pseudoword reading	M1	3.3	17.3	4	15.3
	M2	15	45.3	30.7	48.7

Table 2 - Correct answers per task for the intervention and the comparative group (expressed as a percentage).

Letter-sound results indicate a learning effect, $F(1,34) = 126.763$, $p < .05$, with better results for the intervention group (ca. 80 % in M2) when compared to the comparative group (ca. 65% M2), $F(1,34) = 6.917$, $p < .05$. Although the economic deprivation effect was not extinguished, it is important to notice that ED children in the intervention group achieve better results than NED children in the comparative group (75% vs. 64%), $F(1,34) = 4.126$, $p = .05$. There is a triple interaction which was due to the learning effect (between M1 and M2), two times stronger for the intervention group than for the comparative group (respectively 24% and ca. 12%), along with a learning effect more expressive for ED children than for the NED group (respectively 20% and 15%), $F(1,34) = 4.794$, $p = .036$.

As for the spelling letter task, the learning effect is once again significant, $F(1,34) = 45.505$, $p < .05$, with superiority of the intervention group (ca. 35% vs.10%), $F(1,34) = 14.956$, $p < .05$. The economic deprivation effect disappear in M2 in the intervention group, $F(1,34) = 4.748$, $p < .05$, (89.6% vs. 91.3%), whereas in the comparative group it is maintained. Finally, it is important to highlight that all children attained ceiling results, with

exception to those in the in the comparative group in economically deprived schools.

The results of the phonemic awareness task show a significant learning effect ($F(1,34) = 33.939, p < .05$), more pronounced for the intervention group (50% evolution vs. 25%). The economically deprivation effect is extinguished in M2, $F(1,34) = 5.103, p < .05$. The results of the word reading task also show a larger learning effect, favoring the intervention group (30% vs. 20%), $F(1,34) = 60.729, p < .05$. The economically deprivation effect did not disappear, but a better performance is observable among ED schools in the intervention group, when compared with ED schools in the comparative group (32% vs. 17%), $F(1,34) = 10.210, p = .003$. There is an interaction between Moment of Assessment and Socio Economic Context, which was due to significantly higher progression between Moment of Assessment for those children in NED schools compared to those in ED schools (respectively, 30% and 22%), $F(1,34) = 6.046, p = .019$.

Finally, the pseudoword reading task results show a significantly more pronounced learning effect for the intervention than for the comparative group, $F(1,34) = 34.799, p < .05$ (30% vs. 10%). As observed in the word reading task, although the economically deprivation effect did not disappear, children from the intervention group in ED schools attained, in the second assessment, better results than those in ED schools in the comparative group (31% vs. 15%), $F(1,34) = 10.725, p = .002$.

CONCLUSIONS

Educational software is a valuable resource for children experiencing spelling and reading acquisition difficulties. Adopting the PFG contributed for intensive but playful training, thus reducing the frequent resistance of children to train skills that they feel are demanding. Throughout the training, children were highly involved thanks to the playfulness of the game.

For all measures explored in this study there was a more expressive learning effect for the intervention than for the comparative group. These are promising results, revealing the efficacy of the PFG. The typical disadvantage of children in economically deprived schools was present during the first assessment. After the intervention, this disadvantage was less pronounced between children in the intervention group, whereas for those children in the comparative group the effect remained.

Finally, children were motivated to play the PFG throughout the weeks along all the training period. The preliminary results of the impact of the PFG are strong enough to sustain its adoption with children at risk for experiencing reading acquisition difficulties.

REFERENCES

Huemer, S., Landerl, K., Aro, M., & Lyytinen, H. (2008). **Training reading fluency among poor readers of German: many ways to the goal.** *Ann. of Dyslexia* 58(2), 115–137.

Kyle, L., Kujala, J., Richardson, U., Lyytinen, H., & Goswami, U. (2013). **Assessing the Effectiveness of Two Theoretically Motivated Computer Assisted Reading Interventions in the United Kingdom: GG Rime and GG Phoneme.** *Reading Research Quarterly*, 48(1), 61–76.

Lyytinen, H., Erskine, J., Kujala, J., Ojanen, E., & Richardson, U. (2009). **In search of a science-based application: A learning tool for reading acquisition.** *Scandinavian Journal of Psychology*, 59(2), 668–675.

Lyytinen, H., Ronimus, M., Alanko, A., Poikkeus, A., & Taanila, M. (2007). **Early identification of dyslexia and the use of computer game-based practice to support reading acquisition.** *Nordic Psychology*, 50(6), 109 -126.

Martins, C. (2011). **Manual de análise de dados quantitativos com recurso ao IBM SPSS. Saber decidir, fazer, interpretar e redigir [Quantitative analysis of data with recourse to or IBM SPSS manual. Know how to decide, do, interpret and write].** Braga: Psiquilibrios Edições.

Saine, N.L., Lerkkane, M., Ahonen, T., Tolvanen, A., & Lyytinen, H. (2011). **Computer-Assisted Remedial Reading Intervention for School Beginners at Risk for Reading Disability.** *Child Development*, 82(3). pp 1013–1028.

Simões, M. R., Seabra, M. J., Albuquerque, C. P., Pereira, M. M., Almeida, L. S., Ferreira, C., Lopes, A. F., Gomes, A. A., Xavier, R. E., Rodrigues, F., Lança, C., Barros, J., San Juan, L. & Oliveira, E. (2003). **Escala de Inteligência de Wechsler para Crianças – Terceira Edição (WISC-III).** In M. Gonçalves, M. Simões, L. Almeida & C. Machado (Eds.). *Avaliação Psicológica – Instrumentos Validados para a População Portuguesa*. Vol. I., pp. 221-252. Coimbra: Quarteto Editora.

Squires, K.E., Wolter, J.A. (2016). **The effects of orthographic pattern intervention on spelling performance of students with reading disabilities.** *Remedial and Special Education*, 37(6), 357–369. <https://doi.org/10.1177/0741932516631115>

Sucena, A., & Castro, C.L. (2011). **ALEPE - Avaliação da Leitura em Português Europeu.** Lisboa: CEGOC-TEA.

Sucena, A., Castro, A.F., & Viana, F. (2016). **Intervenção precoce nas dificuldades de aprendizagem da leitura com recurso ao software Graphogame.** *Revista Digital do Programa de Pós-Graduação em Letras da PUCRS*, 9(2), 200-212. <http://dx.doi.org/10.15448/1984-4301.2016.2.23812>

Sucena, A., Castro, S., & Seymour, P. (2009). **Developmental dyslexia in an orthography of intermediate depth: The case of European Portuguese.** *Reading and Writing: An Interdisciplinary Journal*, 22, 791-810. <https://doi.org/10.1007/s11145-008-9156-4>