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Print Awareness in Early Childhood: An Application of the PWPA Tool in Greece

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Abstract

Print awareness, a foundational component of emergent literacy, encompasses the understanding that written language serves as a meaningful communicative modality. This construct involves the acquisition of knowledge regarding text directionality, book conventions, and the differentiation between textual and visual representations. While the literature extensively documents print awareness development across diverse cultural and educational contexts, a relative paucity of research exists concerning the specific ontogeny of these emergent reading skills within Greek preschool settings. This investigation aimed to elucidate preschool children's comprehension of fundamental written language principles, focusing on text placement, reading and writing directionality, and letter recognition. A cohort of 23 children, aged 4-5 years, was recruited from local kindergartens to represent a typical distribution of early reading abilities. Data were collected via semi-structured interviews, administered within familiar classroom settings, utilizing the Preschool Word and Print Awareness (PWPA) instrument. This instrument assessed four distinct domains of print awareness: book structure, text directionality, writing as communication, and letter identification. Employing age-appropriate, engaging prompts, the interviews sought to elicit children's explicit knowledge and implicit understanding of foundational print-related concepts. The findings revealed a robust understanding of reading and writing directionality among the majority of participants. However, comprehension of written language as a communicative tool exhibited greater variability, with only a subset of children demonstrating a clear grasp of this concept. Conversely, a substantial proportion of the children demonstrated proficient letter recognition. These results underscore the imperative for targeted educational interventions and differentiated pedagogical approaches to optimize the development of early literacy skills among young children within the Greek preschool context. Further research is warranted to elucidate the specific sociocultural and pedagogical factors influencing print awareness development in this population, facilitating the design of culturally responsive and evidence-based interventions.

Keywords: print, awareness, preschool education, toddlers, emergent literacy, Greece

Introduction

Emergent literacy skills, particularly print awareness, are critical for children's long-term academic success, as they form the basis of effective reading and writing. This skill is crucial for early reading and writing development and includes knowledge of text directionality, book structure, and the differentiation between text and images. Research has consistently shown that children with strong print awareness are better equipped for decoding and comprehension, forming a basis for later literacy success.

While print awareness is widely recognized as essential to early literacy, limited research has addressed how this skill develops within specific cultural and educational contexts, such as those found in Greece. Moreover, studies often overlook how children's early educational experiences impact their print awareness development, particularly in regions like Greece, where educational settings and resources may differ considerably from those in other contexts. This gap leaves educators and policymakers without sufficient insights into the specific needs of young children in diverse cultural settings.

Given these gaps, there is a need for research that not only assesses print awareness skills but also explores the developmental progression of these skills within specific cultural and educational contexts. This study addresses this need by investigating Greek preschool children's understanding of foundational written language concepts. Using the "Preschool Word and Print Awareness" (PWPA) tool, this research examines text placement, reading and writing directionality, the function of writing as a communication tool, and letter recognition. By exploring these aspects, the study aims to provide a more culturally attuned understanding of emergent literacy skills, supporting the development of targeted, contextually relevant educational strategies to enhance early literacy outcomes in diverse settings.

Purpose and objectives of the research

The purpose of this research is to investigate preschool children's understanding and perception of the basic concepts and functions of written language, focusing on text placement, reading, and writing directionality, the use of writing as a means of communication, and letter recognition and differentiation.

Research questions:

1. Examine the characteristics and concepts of written language in relation to text placement inside and outside a book, such as cover information and title.
2. Investigate children's understanding of the reading and writing directionality of a text, specifically from left to right and top to bottom.
3. Determine the extent to which children perceive the function of writing as a means of communication.
4. Explore children's understanding of the concept of a letter and the distinction between lowercase and uppercase letters.

Literature Review

Print Awareness: Towards an Understanding

Print awareness, a critical precursor to formal literacy acquisition, represents a child's developing comprehension of the communicative function of written language, paralleling that of oral discourse. This construct encompasses several key competencies, including the understanding of the systematic, linear progression of text from left to right and top to bottom, the recognition of orthographic units (letters) within words, and the delineation of word boundaries through inter-word spacing. These skills are foundational for the subsequent development of reading fluency and comprehension (Teale &

Sulzby, 1986; Luo, Pace, Lin, & Hirsh-Pasek, 2021; Hoffman et al., 2024). Furthermore, print awareness extends to the child's acquisition of book-handling conventions, which include the proper manipulation of printed materials, such as page turning, and the identification of structural components, such as covers and titles. Proficiency in these conventions facilitates independent interaction with print media, thereby fostering early literacy development (Lonigan, Farver, Nakamoto, & Eppe, 2013; Cabell, Justice, Zucker, & Kilday, 2009).

A critical aspect of print awareness involves the ability to distinguish between written language and images. This skill allows children to recognize that the primary narrative or informational content in a book or document is conveyed through text rather than illustrations (Guthrie, Wigfield, & You, 2012; Toste, Didion, Peng, & Filderman, 2020). Recent research supports the relevance of this capacity in early literacy, suggesting that children who can distinguish between text and visuals have superior reading comprehension abilities over time (Miller et al., 2023) as print awareness also encompasses an understanding of written language beyond the context of books, extending to everyday environments such as signs, labels, menus, and logos. This broader recognition fosters an awareness that written language is omnipresent and serves varied purposes, from imparting information to providing enjoyment (Sénéchal & LeFevre, 2002; Li & Stevens, 2022).

Stages of Print Awareness Development

The ontogeny of print awareness is characterized by a series of developmental stages, each building upon preceding competencies. During infancy and early toddlerhood, children initiate their interaction with written language through passive observation, often demonstrating nascent recognition of familiar visual symbols, such as ubiquitous logos and signage, encountered within their daily environments. Subsequently, as children advance through early childhood, they develop a more nuanced understanding of the functional affordances of written language. This progression involves the recognition that books serve as vehicles for narrative conveyance, signs function as informational repositories, and labels operate as object identifiers. This stage signifies the emergence of a more sophisticated awareness of the diverse modalities of written language and their corresponding communicative functions (Luo et al., 2021). This developmental trajectory underscores the importance of early and consistent exposure to print in facilitating the acquisition of foundational literacy skills.

During the preschool years, children develop fundamental book-handling skills, including holding books correctly, turning pages, and identifying key book components such as the cover, spine, and title page. Additionally, they begin to grasp the directional conventions of reading (Lonigan, Farver, Nakamoto, & Eppe, 2013; Cabell, Justice, Zucker, & Kilday, 2009). Following this stage, children advance to recognizing individual letters and words, understanding that words are separated by spaces, and realizing that sentences typically start with capital letters and conclude with punctuation (Mendez & Torres, 2023; Wang & Simons, 2022).

These competencies are foundational to reading and writing development (Alatalo & Westlund, 2021). In the subsequent stage, children engage in emergent writing, experimenting with forming letters and words. This phase reinforces their awareness that writing serves as a mode of communication and familiarizes them with the basic conventions of written language (Christie, Enz, & Vukelich, 2011; Bingham, Quinn, & Gerde, 2017).

Print Awareness in Preschool Education: Benefits and Challenges

Print awareness is a foundational skill essential for reading readiness. Children who develop strong print awareness are better prepared to learn to read, as they understand the relationship between spoken and written language—a critical component for effective decoding and text comprehension (Duke,

Ward, & Pearson, 2021). Early print awareness significantly contributes to overall literacy development; children who are aware of written language are more inclined to engage with books and other print materials, fostering a love for reading and continuous learning (Nguyen & Jenkins, 2023). This early engagement promotes vocabulary expansion, language growth, and cognitive development (Lonigan, Farver, Nakamoto, & Eppe, 2013; Cabell, Justice, Zucker, & Kilday, 2009). Research consistently shows that children with well-developed print awareness skills are more likely to excel academically, particularly in reading and writing, which serve as foundations for success across academic subjects (Guthrie, Wigfield, & You, 2012; Toste, Didion, Peng, & Filderman, 2020; Lin & Clarke, 2022).

A primary impediment to the acquisition of print awareness is insufficient exposure to printed language. Children from socioeconomically disadvantaged backgrounds or those residing in environments characterized by limited literacy practices frequently exhibit restricted access to books and other print-based resources, thereby hindering the development of this foundational skill (Luo et al., 2021). The heterogeneity of early written language experiences, shaped by both formal educational settings and familial contexts, contributes to significant variability in print awareness development. Notably, children who benefit from consistent parental and caregiver support and encouragement demonstrate enhanced print awareness capabilities compared to their peers who lack such scaffolding (Sénéchal & LeFevre, 2002). These disparities in early exposure and support have profound implications for subsequent literacy outcomes and academic achievement, underscoring the critical role of early intervention and equitable access to print-rich environments in mitigating educational inequalities.

The establishment of print-rich environments, crucial for fostering emergent literacy, is frequently impeded in preschool settings by resource constraints, limiting the availability of diverse and developmentally appropriate print materials. Furthermore, a significant factor contributing to suboptimal reading outcomes is the potential lack of specialized pedagogical training among educators in effectively promoting print awareness (Alatalo & Westlund, 2021). This issue is particularly salient for vulnerable populations, including children acquiring English as a second language (ESL), those with developmental disabilities, and those with language impairments. These children often encounter substantial obstacles in acquiring print awareness due to the inherent limitations of standardized instructional methodologies in addressing their unique linguistic and cognitive profiles. Consequently, tailored interventions, grounded in evidence-based practices and responsive to individual needs, are imperative to facilitate the development of foundational reading skills in these at-risk populations (Christie, Enz, & Vukelich, 2011; Bingham, Quinn, & Gerde, 2017). This necessitates a nuanced understanding of the intersection between environmental factors, teacher preparation, and individual learner characteristics to effectively mitigate disparities in early literacy development.

Even though Print Awareness has several established advantages, such as better academic achievement and increased literacy development, there are a number of issues that need to be resolved. These include disparities in early experiences, unequal exposure to written language, and inadequate funding for early education initiatives. To overcome these obstacles and guarantee that every kid has the chance to acquire the required Print Awareness abilities, educators, parents, and legislators must work together.

Method

Participants

To investigate children's foundational print awareness in a Greek preschool context, this study employed a sample of 23 children, assessed through semi-structured interviews using the PWPA tool. Of these, thirteen were boys (57%) and ten were girls (43%). Specifically, fifteen students were aged 4 years (65%) and eight students were aged 5 years (35%). All research subjects were at approximately the same literacy level.

Research Instruments

The data collection method chosen was that of the semi-structured interview, based on pre-constructed questions from a questionnaire (Justice & Ezell, 2001) that were examined alongside the reading of the story "The Moon Got Lost" (Tafa, 2017). The "Preschool Word and Print Awareness" (PWPA) tool developed by Justice and Ezell (2001) is an assessment tool designed to measure young children's knowledge and awareness regarding written language. This tool plays a crucial role in early childhood education, providing valuable insights into children's emerging literacy skills, which are essential for later reading success. The PWPA tool assesses multiple dimensions of writing awareness, including children's understanding of the functions, forms, and conventions of written language. This includes letter and word recognition, understanding the directionality of writing, and knowing how writing conveys meaning. The tool specifically focuses on assessing children's awareness of words within text, which is a fundamental skill for reading. This includes understanding that words consist of letters, recognizing word boundaries, and identifying common sight words.

Method and Procedure

The research used a qualitative approach with semi-structured interviews to explore preschool children's print awarenesson their pre-reading ability stage, ensuring a representative sample of early literacy development stages. These children were attending collaborating kindergarten centers (convenient sampling) and they were selected based on their reading ability (purposively) at the first stage and randomly at the second stage (random sampling).

Initially, each child was introduced to the storybook that would be used later in the research. The process began with the children handling the book externally, allowing them to become familiar with its physical characteristics. This initial interaction set the stage for the subsequent stages of the interview process.

At each stage of reading the story, the researcher posed specific questions designed to align with the study's research objectives. The questions were drawn from a comprehensive question pool structured into two main parts. The first part focused on four key areas:

1. The Structure and Role of the Book's Exterior: This included questions about identifying the front and back covers, recognizing the book's title, and understanding the function of these elements. In particular, children were asked, "Can you show me where the title of the book is?" and "What do you think the cover of the book tells us?"
2. The Directionality of Written Language: Questions in this area assessed children's understanding of how text is read and written, specifically the left-to-right and top-to-bottom orientation. Specifically, "Which way do we start reading the words?" and "Can you show me how to turn the pages?"
3. The Function of Language as a Means of Communication: This set of questions explored children's perception of written language as a tool for conveying messages. Children were asked, "Why do we use writing?" and "What can we do with the words in this book?"
4. The Role of Letters as Structural Elements of Language: These questions aimed to evaluate children's recognition of letters and their understanding of the difference between lowercase and uppercase letters. Questions included, "Can you find a big letter on this page?" and "What sound does this letter make?"

The second part of the questionnaire, which focused more on words, their size, and the spaces between them, was not the primary focus of this study. However, it included questions like "How many words are on this page?" and "Can you see spaces between the words?"

Throughout the interview process, researchers ensured that all questions were age-appropriate and engaging to maintain the children's interest and comfort. The semi-structured nature of the interviews allowed for flexibility, enabling researchers to follow up on children's responses with additional probing questions to gain deeper insights.

All participating children completed the questions, and no child was excluded during the control process. This thorough and systematic approach ensured that the data collected was comprehensive and reflective of the children's print awareness skills.

Focusing on the first part of the questionnaire provided detailed insights into children's understanding of basic written language concepts. The subsequent results analysis draws from this rich qualitative data to highlight the key findings and implications for early childhood literacy education.

Research Procedures

The study utilized semi-structured interviews with 23 preschool participants, focusing on assessing foundational aspects of print awareness. Interviews took place within the familiar environment of the children's classrooms to maximize comfort and natural engagement. Each session was audio-recorded with prior parental consent to ensure the accuracy of responses and minimize reliance on memory or manual note-taking during interviews.

Data Recording and Processing

To capture responses accurately, each interview was transcribed verbatim from the audio recordings by two independent researchers. The transcriptions included verbal responses and significant non-verbal cues, such as gestures pointing to parts of the book or expressions indicating confusion or understanding, which added context to children's answers. These non-verbal details were logged as annotations within the transcript. After transcription, the researchers reviewed and cross-checked all data for consistency, and any ambiguities in the children's responses were clarified through additional notes made during the interviews. The fully transcribed dataset was organized by participant, question, and response, creating a comprehensive, indexed dataset for later stages of analysis.

Data Categorization and Conceptualization

The transcribed responses were grouped into four major categories, each representing an aspect of print awareness:

1. Book Structure Understanding: Recognizing parts of a book (cover, title, pages).
2. Reading and Writing Directionality: Understanding the left-to-right and top-to-bottom orientation.
3. Function of Writing as Communication: Recognizing writing's role in conveying messages.
4. Letters as Structural Elements: Differentiating letters, including uppercase and lowercase recognition.

Each main category was further subdivided based on emerging patterns within the responses. For example, within Reading and Writing Directionality, responses were classified into three levels: fully directional (correctly identifying left-to-right, top-to-bottom orientation), partially directional (indicating only one correct direction), and non-directional. These subcategories provided a nuanced view of each child's understanding within each literacy component.

Coding and Data Analysis

Data analysis was performed using a qualitative content analysis approach, where each response was coded according to thematic elements within the predefined categories. Two researchers coded the data independently to ensure objectivity and reduce the potential for coder bias. Coding involved tagging responses with specific identifiers, such as "Correct Directionality", "Partial Understanding of Structure", or "Unclear Concept of Communication". After initial coding, the two sets of codes were compared, and inter-coder reliability was assessed using Cohen's kappa, yielding a value of 0.84, which indicated a high level of agreement.

To further validate the analysis, both coders participated in a collaborative review process to discuss and resolve discrepancies. During this phase, if any coded data points diverged in interpretation, a third researcher moderated to reach a consensus. This thorough process ensured that the coding scheme was consistent and representative of the children's responses across all categories.

Validation and Reliability Measures

To reinforce the validity of the findings, a member-checking step was included, involving informal feedback sessions with the teachers of a subset of participants. During these sessions, teachers reviewed the thematic categories and subcategories to confirm that the coding and interpretation accurately reflected the children's typical classroom behaviors and language comprehension levels. This external validation step served as a check on the reliability of our categories and interpretations.

Ethical Considerations

Firstly, informed consent was obtained from the parents or legal guardians of all participating children. This process included providing comprehensive information about the study's purpose, procedures, potential risks, and benefits. Parents were assured that participation was entirely voluntary and that they could withdraw their child from the study at any time without any negative consequences. Secondly, the privacy and confidentiality of the participants were rigorously maintained. All data collected during the study were anonymized to protect the identities of the children. Personal information was securely stored and only accessible to the research team. Findings were reported in aggregate form, ensuring that no individual child could be identified.

The study emphasized minimizing potential harm or discomfort to the children. The research activities were designed to be age-appropriate, non-intrusive, and engaging. The interviews and assessments were conducted in a familiar and comfortable setting within the children's regular preschool environment, reducing any anxiety or stress. Researchers were trained to interact with the children sensitively and respectfully, prioritizing their well-being at all times. Moreover, ethical considerations extended to the handling and dissemination of the research findings. The results were presented honestly and transparently, avoiding any misrepresentation or exaggeration. The study acknowledged any limitations and potential biases, providing a balanced interpretation of the findings. In addition, the study followed the principles outlined in the Declaration of Helsinki and the guidelines provided by the International Hellenic University's ethics committee. This adherence ensured that the research met the highest standards of ethical conduct. Finally, the research team continuously monitored the ethical aspects of the study throughout its duration. Regular meetings and reflections were held to ensure that the ethical standards were upheld and that any emerging ethical issues were promptly addressed.

Results

The results analysis that follows is divided into four axes. These axes emerged from the grouping of questions from the first part of the original questionnaire for better conclusions. The axes created were as follows: (a) external part, (b) written language directionality, (c) written language as a means of communication, and (d) letters as structural elements of language.

Regarding the questions related to the book's external part (Table 1), title, and content, it was observed that out of 23 children, about a quarter (26.1%) were able to provide adequate answers. Almost half of the children (39.1%) provided only one valid answer. Specifically, 9 children (39.1%) scored 1 on the questions related to the book's external part and title, 4 children (17.4%) scored 2, another 4 children (17.4%) scored 3, and 6 children (26.1%) scored 4, which was the highest score in this category of questions. The results underscore the need to introduce targeted activities in preschool education that enhance children's comprehension of the purpose behind book components, not just their physical attributes. This finding suggests that while preschool curricula may successfully introduce book structure, a more intentional focus on book function could support literacy comprehension.

Table 1 *External Part - Book Title*

Frequency	Percent	Valid Percent	Cumulative Percent
1	9	39.1	39.1
2	4	17.4	56.5
3	4	17.4	73.9
4	6	26.1	100.0
Total	23	100.0	100.0

Regarding the directionality of written language, the following results were observed as presented in Table 2. Although the majority of children seemed to know the direction of reading and writing, identifying the correct direction of language, some children either perceived the vertical rather than the horizontal flow of language or did not understand the directionality of written language at all. Specifically, 5 children (21.7%) scored 0 on the questions about the directionality of written language, 3 children (13.0%) scored 2, 1 child (4.3%) scored 4, 5 children (21.7%) scored 5, 1 child (4.3%) scored 6, and the remaining 8 children (34.8%) scored 7, which was the highest score in this category of questions. Categorizing the individual performances into low (scores 0-2), medium (scores 3-4), and high (scores 5-7), the children's performances

Table 2 *Written Language Directionality*

Frequency	Percent	Valid Percent	Cumulative Percent
0	5	21.7	21.7
2	3	13.0	34.8
4	1	4.3	39.1
5	5	21.7	60.9
6	1	4.3	65.2
7	8	34.8	100.0
Total	23	100.0	100.0

could be grouped as follows: 8 students (34.8%) had low performance, 1 child (4.3%) had medium performance, and 14 children (60.9%) had high performance. Therefore, we could argue that the majority of children understood the directionality of reading and writing a text. These findings emphasize that children's exposure to text orientation through hands-on activities can foster a more comprehensive understanding of directionality. This insight may inform curriculum enhancements focused on text orientation through multi-sensory activities, particularly for those who showed limited comprehension.

In the case of questions concerning the perception of written language as a means of communication (Table 3), the children seemed to be almost equally divided into two categories: those who perceive written language as a means of communication and those who are not yet able to understand it. Specifically, 8 children (34.8%) scored 0, 4 children (17.4%) scored 2, 3 children (13.0%) scored 3, and 8 children (34.8%) scored 4, which was the highest score in this category of questions. This result indicates that children's understanding of writing is closely tied to their exposure to practical writing activities. It suggests that introducing more varied contexts for writing in preschool—such as letter writing or labeling classroom objects - could enhance comprehension of writing's communicative role.

Table 3 *Written Language as a Means of Communication*

Frequency	Percent	Valid Percent	Cumulative Percent
0	8	34.8	34.8
2	4	17.4	52.2
3	3	13.0	65.2
4	8	34.8	100.0
Total	23	100.0	100.0

Regarding the questions about understanding letters as structural elements of language (Table 4), it was observed that more than half of the children (52.2%) were able to understand the role of individual letters within a written text. Specifically, 3 children (13.0%) scored 0, 2 children (8.7%) scored 1, 6 children (26.1%) scored 2, and 12 children (52.2%) scored 3, which was the highest score in this category of questions. Therefore, we could argue that most children do not seem to struggle with the smaller structural elements of language, such as letters. The strong performance in this area suggests that letter recognition activities are effective in the current educational approach. However, expanding these activities to include phonetic awareness and linking letters to sounds could further strengthen children's readiness for reading.

Table 4 *Letters as Structural Elements of Language*

Frequency	Percent	Valid Percent	Cumulative Percent
0	3	13.0	13.0
1	2	8.7	21.7
2	6	26.1	47.8
3	12	52.2	100.0
Total	23	100.0	100.0

Additionally, a comparison of the performances of both genders in each category of questions, as well as the two age groups of the subjects participating in the research, was pursued as shown in Tables 5-6.

Table 5 *Performances of the Two Genders in Each Category of Questions*

External part				
Gender of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Boys	13	2.54	1.266	0.351
Girls	10	2.00	1.247	0.394
Directionality				
Gender of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Boys	13	4.69	2.562	0.711
Girls	10	3.60	3.098	0.980
Role as Communication				
Gender of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Boys	13	2.46	1.613	0.447
Girls	10	1.70	1.889	0.597
Letters				
Gender of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
Boys	13	2.31	0.947	0.263
Girls	10	2.00	1.247	0.394

Table 6 *Performances of the Two Age Groups in Each Category of Questions*

External part				
Age of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
4 years	15	2.00	1.134	0.293
5 years	8	2.88	1.356	0.479
Directionality				
Age of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
4 years	15	3.40	2.898	0.748
5 years	8	5.75	1.909	0.675
Role as Communication				
Age of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
4 years	15	1.67	1.718	0.444
5 years	8	3.00	1.512	0.535
Letters				
Age of Subjects	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
4 years	15	2.33	1.113	0.287
5 years	8	1.88	0.991	0.350

In none of the above cases was there a statistically significant difference observed between the performance of boys and girls (sig = 0.320 > p = 0.05, sig = 0.365 > p, sig = 0.309 > p, and sig = 0.508 > p, respectively, in each category of questions).

Similarly, in the two different age groups examined, no statistically significant difference was observed between their performances (sig = 0.114 > p = 0.05, sig = 0.052 > p, sig = 0.079 > p, and sig = 0.341 > p, respectively, in each category of questions).

Discussion

The purpose of this research was to investigate preschool children's understanding and perception of the basic concepts and functions of written language, focusing on text placement, reading and writing directionality, the use of writing as a means of communication, and letter recognition and differentiation. Employing the PWPA tool was achieved to investigate their print awareness and come to certain conclusions regarding the Greek preschoolers' levels of print awareness.

This study highlighted that the majority of children understood the directionality of reading and writing, as evidenced by the high success rates in related questions, a find which is consistent with the research of Justice and Ezell (2002) and Whitehurst and Lonigan (1998) who found that preschool children participating in structured reading activities develop substantial directionality skills. However, despite the positive findings, some children failed to fully understand the directionality of written language. This behavior is reinforced by the research of Neuman & Celano (2001), Connor, Morrison, and Slominski (2006), Justice, Mashburn, Hamre and Pianta (2008), Morgan, Farkas, Hillemeier, and Maczuga (2016) emphasizing that the lack of personalized teaching and systematic support leads to inequalities in understanding writing. The lack of adequate educational guidance is also confirmed by the research of Dyson (1983) and Puranik and Lonigan (2012), who note that children who do not receive sufficient support struggle to develop solid writing skills. Overall, the results of this study, combined with the referenced research, underscore the need for targeted and personalized educational interventions. The combined analysis of these findings demonstrates that systematic and tailored to each child's needs educational support is critical for developing reading and writing directionality skills.

When evaluating children's knowledge of written language as a communication tool, the results show a nearly equal split among participants: some showed awareness that writing transmits messages, while others did not yet comprehend this idea. This variety is consistent with the developmental insights of Clay (1975) and Rowe (2018), who discovered that preschool children's perception of writing as a communication medium varies significantly owing to variances in exposure and cognitive development. Such discrepancies indicate that the capacity to see writing as a method of communication does not develop evenly throughout early life. Gerde, Bingham, and Pendergast (2015) discovered that engaging youngsters in organized activities like letter writing or storytelling may dramatically improve their comprehension of writing's communicative role. Similarly, Byington and Kim (2017) found that active participation in creative writing projects not only helps youngsters understand the purpose of writing but also creates an intrinsic drive to interact with written language. These results are supported by Hall and Robinson (1995) and Rowe and Neitzel (2010), who claim that literacy activities must be both engaging and culturally appropriate, relating to children's own experiences and everyday lives. Collectively, these findings underline the vital importance of flexibility and variety in early literacy activities. Incorporating a variety of communicative writing exercises adapted to specific developmental stages may contribute to a more thorough grasp of written language as a communicative tool. This flexibility in teaching techniques, which takes into account each child's individual background and developmental speed, emerges as critical for fostering strong language skill development and encouraging children's meaningful engagement with written material.

Regarding children's knowledge of letters as key aspects of language structure, the data show that the majority of participants performed well in this area. This finding is consistent with Piasta and Wagner's

(2010) study, which demonstrates that preschool-aged children may understand the value of letters in written text when given proper educational guidance and assistance. Their findings show that even at an early age, children may establish a basic understanding of letters as distinct elements that serve as the building blocks of language. While our study did not specifically assess the impact of targeted interventions, Lonigan, Purpura, Wilson, Walker, and Clancy-Menchetti (2013) found that interactive, play-based activities that reinforce letter identification and phonemic awareness can help improve letter recognition even further. These experts argue for organized, game-like treatments that engage children in letter-based learning activities, which may be especially helpful in boosting early reading. Their findings highlight the necessity of including letter-focused activities in early childhood curriculum as part of a holistic literacy strategy that promotes children's long-term reading and writing development. Taken together, these results and accompanying studies highlight the importance of long-term and interactive teaching practices that promote letter identification in early literacy programs. Integrating letter-focused games and activities may help young children reinforce their grasp of letters as structural language components, setting the groundwork for more advanced literacy abilities and preparing them for formal reading instruction.

Limitations

While this research provides valuable insights into preschool children's print awareness, it is essential to acknowledge several limitations that could impact the generalizability and interpretation of the findings. Firstly, the sample size of 23 children, though sufficient for an exploratory study, is relatively small. This limited sample size restricts the ability to generalize the results to the broader population of preschool children. Given the limited sample size and cultural specificity of this study, future research should involve larger, more diverse samples to generalize findings and explore cultural influences on print awareness, the study's geographic scope was confined to a specific region in Greece. Cultural, linguistic, and educational differences across regions and countries can significantly influence children's print awareness. Consequently, the findings may not apply to other contexts with different educational systems and cultural backgrounds. Expanding the research to include diverse geographic locations would provide a more comprehensive understanding of print awareness in early childhood.

Furthermore, the study also did not account for potential confounding variables such as the children's prior exposure to literacy activities at home or in preschool, parental involvement in reading, or socio-economic status. These factors can significantly influence children's print awareness and should be controlled for in future research to isolate the effects of the interventions more accurately. Lastly, the cross-sectional nature of the study limits the ability to conclude the development of print awareness over time. Longitudinal studies tracking children's print awareness from preschool through early elementary school would provide valuable insights into the progression and stability of these skills and the long-term impact of early interventions.

Despite these limitations, the study underscores the importance of targeted educational interventions and lays the groundwork for future research. Addressing these limitations in subsequent studies will enhance the understanding of print awareness and its role in early literacy development, ultimately informing more effective educational practices and policies.

Conclusion

This study provides a detailed look into the print awareness skills of preschool children in Greece, identifying key developmental areas in their understanding of book structure, directionality, writing as a communication tool, and letter recognition. The results demonstrate that, while many children exhibit an emerging awareness in these areas, specific gaps remain, particularly in fully comprehending directionality and the functional role of writing.

The findings highlight the importance of targeted early literacy education, particularly in reinforcing foundational concepts that underlie successful reading and writing skills. These results are valuable for educators aiming to adapt literacy instruction in preschool settings, as they offer insights into the developmental progression of print awareness. The study's use of the PWPA tool also emphasizes the utility of structured assessment tools in identifying literacy strengths and challenges among young children.

The study suggests that tailored educational strategies, such as integrating more print-rich activities and hands-on book interactions, may help address areas where children struggle, like directionality comprehension and understanding writing as a means of communication. By addressing these specific areas, educators can foster more comprehensive literacy foundations that support future academic success.

Future research could expand this work by exploring how cultural factors influence print awareness development across diverse populations and age groups. Longitudinal studies could also provide valuable insights into how early interventions affect literacy skills over time. Additionally, examining the impact of specific educational interventions on each aspect of print awareness could guide more targeted approaches in early childhood education.

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