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Contemporary Trends in Phonological Awareness Studies: A Review of Selected Articles

Samer Mahmoud Al-Zoubi^{1*} , *Mousa Khalil Abunawas*² 

¹ Department of English Language and Literature, Ajloun National University, Ajloun 26810, Jordan

² English Department, Abu Dhabi University, Abu Dhabi 59911, United Arab Emirates

ABSTRACT

The primary objective of this study was to analyze the contemporary trends in phonological awareness (PA) research by examining ten selected articles and gaining a comprehensive understanding of this field. The data for this study were gathered from articles available in Google Scholar and ResearchGate-indexed journals, resulting in the selection of ten relevant articles published between 2020 and 2023. These ten articles were cross-analyzed according to research (Title & Authors), participants, research design, data collection, data analysis, research setting, and findings. Analyzing the results of the selected articles according to the similarities in phonological awareness could yield valuable insights into contemporary research trends in phonological awareness (PA). The study employed a descriptive bibliometric approach in which a report card was developed, and content analysis was utilized to reveal contemporary trends in phonological awareness articles during the specified period. The findings indicated that the predominant focus of these articles was on the impact of phonological awareness on reading development, particularly among primary school students. Additionally, the majority of articles utilized tests as a data collection instrument, and they demonstrated the effectiveness of phonological awareness in improving child literacy, reading skills, speaking skills, and technology-based assessment of reading skills. The researchers recommended that future studies expand the sample size by including more articles on phonological awareness, focusing on kindergarten and primary school students, to address gaps in our understanding of collaborative efforts in phonological awareness.

Keywords: Phonological Awareness; Child Literacy; Reading Skills; Speaking Skills; Contemporary Trends

*CORRESPONDING AUTHOR:

Samer Mahmoud Al-Zoubi, Department of English Language and Literature, Ajloun National University, Ajloun 26810, Jordan;
Email: samer.alzobi@anu.edu.jo

ARTICLE INFO

Received: 11 March 2025 | Revised: 28 March 2025 | Accepted: 5 April 2025 | Published Online: 13 April 2025
DOI: <https://doi.org/10.30564/fls.v7i4.9058>

CITATION

Al-Zoubi, S.M., Abunawas, M.K., 2025. Contemporary Trends in Phonological Awareness Studies: A Review of Selected Articles. *Forum for Linguistic Studies*. 7(4): 703–715. DOI: <https://doi.org/10.30564/fls.v7i4.9058>

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1. Introduction

Understanding the progress and function of a child's literacy is essential to uncovering the cognitive processes involved in learning to read. Several researchers have confirmed the existence of a connection between phonological awareness (PA) and children's literacy development. The progress and function of literacy are a continuing process of change that includes critical stages resulting in the recognition of sound literacy skills. Phonological skills begin before school entry and continue to develop in the early years. Children experience the sounds in their language and start to form a mental store of how these sounds come together to form words^[1]. Phonological awareness (PA) refers to the sound structure of spoken language. Mainly, it is a broad skill that includes the ability to hear and play with smaller sounds in words. This skill involves activities such as identifying and manipulating sounds. It can also include speaking rhyming words, clapping out the syllables in a word, or recognizing the initial sound of a word. The ability of a child to identify and modify specific sounds within words is known as phonological awareness (PA). It is one of several basic elements of language, in addition to grammatical and semantic structures, and the experience used during the reading process. It is an umbrella term encompassing several sound-based skills, such as word awareness, syllable awareness, onset-rime awareness, and phonemic awareness. Children with phonological awareness can solve problems in reading and will generally feel comfortable with literacy learning^[2].

Children who have difficulties with phonological awareness might have problems in learning to read and spell. This will affect their progress in reading and writing. A large number of children have phonological awareness before they start reading. However, others lack the skills to decode, blend, and segment sounds in language. These children will have difficulty learning to read and spell. Phonological awareness has been incorporated into school education and has shown great success in improving the literacy levels of many children. It is seen that recognizing phonological awareness will help children in learning to read and write. Essentially, phonological awareness can be seen as a critical thinking skill that involves problem-solving and decision-making in reading and spelling. It has the potential to significantly raise levels of literacy in English and should

not be overlooked in children's learning. Children begin to learn phonological awareness (PA) skills before school. Most children naturally learn phonological awareness skills from parental guidance through teacher instruction, and language games. However, phonological awareness can be improved through education, and the advancement in phonemic awareness leads to the development of word decoding^[3]. In the same context, many researchers have called for the inclusion of teaching phonological awareness, specifically in kindergarten and early grades, with poor reading achievement, and most of the children who suffer from weak phonological awareness find it difficult to read correctly^[4].

Phonological awareness (PA) has consistently been shown to be the best predictor of early reading ability. Phonological awareness tasks involve segmenting words into sounds, blending sounds to form words, deleting sounds from words, and manipulating sounds to make new words. It consists of the ability to recognize isolated sounds within a single word and the ability to form rhymes and blend sounds to form words. Phonological awareness signifies a previous ability to read that leads to better results in language acquisition, and its success leads to effective literacy learning. It should be noted that phonemic awareness is important and necessary for the educational process, as without phonological awareness, students lose their ability to write or read. They will not be able to understand what the sounds represent, recognize and identify them, and segment them into words, which will negatively reflect on academic performance. Phonological awareness has also been linked with learning to spell. Good spellers are usually good readers and can manipulate phonemes to assist with spelling a word. With the importance of phonological awareness being established and the trends being seen in today's education system, teachers must be able to assess a child's phonological awareness and provide effective instructions to assist children with their PA development^[5].

This review aims to synthesize key findings from recent studies (2020–2023) to highlight current trends in phonological awareness research. By examining the scope, methods, and implications of selected articles, this paper provides insights into how the field is responding to emerging educational challenges and how future research might further advance the effectiveness of PA instruction across varied learning contexts.

1.1. Development of Phonological Awareness

Phonological awareness (PA) is a developmental skill that begins to form before birth. The first knowledge of phonological structure includes primitive auditory perceptions of prosodic elements of language, mainly intonation and rhythm. Research shows that the infant's brain is sensitive to the phonemes of the world's languages according to the rhythm pattern of stressed syllables and unstressed syllables. Then, the first signs of phonological processing become perceptible between the ages of 6 and 12 weeks. Babies as young as 2 days old are sensitive to the rhythm patterns of syllables in words. This progress is accompanied by evident similarities in the patterns of rhythm in babies and their caregivers during interactions, in which they take turns in their expressions and have pronounced stress patterns when talking to their children^[6].

Preschoolers can improve their capacity to modify syllables within words through several actions, such as counting, identifying, blending, segmenting, deleting, and replacing phonemes. Word segmentation and blending are two of the most challenging phonemic awareness skills. They also encouraged students to practice word segmentation and mixing orally several times. A syllable's onset is its initial consonant or consonant cluster, while its rime is its last vowel. Finally, young toddlers find it extremely challenging to manipulate the tiniest units of sound and phonemes. However, a student's future success in learning to read may be predicted by their performance in these activities^[7]. The development of phonological awareness follows a continuum of overlapping skills, starting with the manipulation of larger sound units and working down to smaller sound units. Instructors need to have a strong comprehension of the relationship between phonological awareness and the development of reading skills. Teachers also need to incorporate phonological awareness lessons into their classroom teaching. Students go along the continuum by segmenting sentences into individual words, segmenting phrases into syllables, and finally, blending the segmented syllables into words^[8]. There are various linguistic levels at which sound components can be described, such as phonemes, syllables, and rhymes. Phonological awareness involves the skills of segmenting, blending, and manipulating sounds in words. Therefore, it is seen that phonological awareness is an important skill for reading and writing in one language^[9].

Moats & Tolman classify phonological awareness development into several age stages, as each stage includes certain characteristics^[10]. Firstly, awareness of rhyming words. This stage represents the age of (3–4) years, during which the child can identify words that rhyme, such as die, by, high, sky, and rely. The second is syllable awareness. This stage represents the age of (4–5) years, when the child can understand that words are composed of phonetic syllables, such as realizing that the word "happy" consists of two syllables (ha-ppy). Thirdly, replacing sounds. This stage represents the age of 6 years, so the child will be able to replace a letter with another word and recognize words if a letter is deleted during pronunciation, such as practicing minimal pairs like cat, bat, rat, and fat. Thus, this skill encourages students to change one letter in a word to make a different word. Fourthly, sound isolation. This stage represents the age of 6 years, during which the child can segment words into beginning, middle, and end. Phonetic mixing: This stage represents the age of 6 years when the child can combine the spoken sounds in fragments to obtain a word, such as (chair), pronounced by his community. Segmenting the sound: This stage represents the age of 6–7 years. At this stage, the child can disassemble the sounds in the word and know their number and what they are, such as the word dog, as the child can identify the sounds of the /d/, /ɒ/, and /g/. Manipulating sound: This stage represents the age (7 and above). At this stage, the child can replace and delete sounds and form new words.

The importance of phonological awareness (PA), or the ability to recognize or think about the sounds in spoken words such as rhymes, syllables, and individual phonemes (sound units), for literacy acquisition and skill development has been widely documented. The development of phonological awareness, a subset of phonemic awareness skills, is thought to occur in the earliest stages of language development through the recognition and labeling of stress patterns and the identification of word-internal rhyme and alliteration. PA continues to develop through the awareness of the relationship between spoken and written language structures, including syllables, onset, and rime, and the ability to recognize phonemic structure, which is the smallest meaningless sound unit that distinguishes meaning. By age 3, the majority of children can identify pairs of rhyming words and produce a rhyme with the correct phonological structure. Improvement

continues to occur throughout the early elementary years, with the rate of scoring increasing from 5–6 to 7–8 years of age^[11].

However, different languages have different sounds and sound patterns, and thus, phonological awareness (PA) proficiency in one language does not equate to the same proficiency in another language. This would be the same for English speakers learning a language other than English. Phonological awareness signifies a previous ability to read that leads to better results in language acquisition, and its success leads to effective literacy learning. Phonological awareness involves the detection and manipulation of sounds at three different levels of sound structure: first, phonemes, the smallest meaningless unit of sound that can differentiate meaning. Second, onsets and rimes. Third, syllables; however, having knowledge and skills in language does not equate to having phonological awareness^[12].

1.2. Research Significance

Phonological awareness is a vital aspect of literacy development and language acquisition. Over the years, research in this area has evolved, reflecting shifts in theoretical perspectives, assessment methodologies, and instructional strategies. This review synthesizes selected contemporary studies to underscore key trends and their significance in phonological awareness research. The objective of this research was to shed light on previous research conducted in the field of phonological awareness (PA) and its effect on child literacy and reading development. Ten relevant articles published between 2020 and 2023 were selected for this study. Analyzing the similarities between each article could yield valuable insights into contemporary research trends in the area of phonological awareness and contribute to justifying the requirements for phonological awareness for child literacy and reading development. Moreover, understanding these contemporary trends is crucial for educators, linguists, and policymakers alike.

1.3. Research Questions

This study attempts to answer the following questions:

1. What was the common concentration of the selected articles on phonological awareness?
2. What patterns were observed in selecting participants in

the selected articles on phonological awareness?

3. What data collection tools were commonly used in the selected articles on phonological awareness?

2. Literature Review

A significant quantity of research has been conducted to investigate the nature of phonological awareness and how it affects learning to read and spell, given the relation between phonological awareness and literacy success. The importance of phonological awareness (PA) has been further reinforced by the greater diversity found in today's classrooms. Students from differing linguistic backgrounds all exhibit the same sequence of (PA) development, yet they will progress at different rates depending on how similar their first language is to the English language. This presents difficulties for some ESL/EFL students and can be a cause of reading difficulties.

Míguez-Álvarez et al. stated that phonological awareness is directly related to success in learning to read^[8]. People who have difficulty in reading tend to lack awareness of sounds or phonological decoding ability. Phonological awareness is one of the best indicators of how children will learn to read during the first two years of learning. It is also the strongest predictor of later reading ability. Phonological awareness is a higher predictor of reading ability than intelligence, reading age, and listening comprehension. This clearly shows that phonological awareness is essential for learning to read and the direct relationship it has to phonics and reading. O'Brien et al. studied syllable, rime, and phoneme level awareness for bilingual children with differences in the structure of their known languages to explore any possible cross-language effects of their ethnic language on English reading^[13]. The study emphasized that phonological awareness is essential for early reading acquisition across alphabetic and non-alphabetic languages.

A study by Abdul Kareem & Habetr investigated the phonological awareness skills needed for Arabic language teachers from the perspective of teaching the Arabic language^[14]. The sample of the study consisted of 47 male and female teachers at the Faculties of Education and Arts at the University of Al-Qadisiyah, Iraq. A questionnaire was prepared to recognize the phonological awareness skills required for Arabic language teachers from the perspective of

teaching the Arabic language, consisting of 22 items. The results indicated that the degrees of the phonological awareness skills needed for Arabic language teachers were higher than the weighted hypothetical mean, and this indicates the need for phonological awareness skills for teachers in the faculties of education and arts.

Al-Ghazo & Al Smadi conducted a content analysis study of the authenticity of the English reading texts in the student's book of Action Pack grade eleven in Jordan^[15]. To determine to what extent the reading texts are authentic, frequencies and percentages are used to answer the study questions. The results of the analysis showed that the reading texts of the student's book in Action Pack Eleven have a high degree of authenticity. Moreover, there is a strong correlation between reading-specific outcomes and the reading text's authenticity in Action Pack Eleven. However, the concentration on authentic reading texts highlights the significance of reading skills in building the communicative competence of Jordanian students at the secondary stage.

Mohammed emphasized that phonological awareness is a key component and a strong predictor of later reading and spelling success^[16]. It encompasses awareness of and access to the sound structure of oral language. This involves an understanding and manipulation of the smallest meaningless units of language, which are phonemes. It also extends to an understanding of the structure of words in a broader sense, including syllables, onset, and rime, and moves to an awareness of the sound structure of sentences and words created within a larger context of meaning. Phonological awareness activities can be implemented at all of these levels, ranging from simple to complex, but all develop the skill of thinking about and manipulating the sound structure of language.

Children's phonological awareness was studied by Vloedgraven and Verhoeven throughout elementary school grades^[17]. An evaluation of phonological awareness was conducted using five sets of items. It assessed phoneme segmentation, phoneme blending, phoneme identification, phoneme deletion, and rhyming. One thousand four hundred five kids in kindergarten through fourth grade made up the sample. The findings demonstrated that phonological awareness is dimensional across tasks and academic levels. The item sets for phoneme blending, phoneme identification, and rhyme were easier than those for phoneme segmentation and

deletion, in addition to some overlap between them. The findings provide support for the theory that phonological awareness is a continuum of phonological representations' availability, which can vary from complete availability to partial availability.

Ziegler & Goswami claimed that children acquire the ability to arrange their mental lexicon according to the sound patterns in their language^[18]. Phonological awareness is a metalinguistic skill that comprises the insight into and manipulation of the sound structure of language. It is a skill that Stackhouse & Wells have suggested is ideally developed in children through explicit teaching as a planned part of a coherent literacy curriculum^[19]. This is because phonological awareness is a strong predictor of children's success in learning to read and spell, as well as being causally related to learning-to-read ability.

To sum up, many researchers have confirmed that phonological awareness is a basic condition for learning to read. The phonological abilities of a young child are the best indicators of the ability to acquire reading skills. Moreover, phonological awareness forms the basis of the writing process, as it is possible to notice how letters are associated with sounds that can be written in a certain way. It also provides the ability to pronounce and read new words, in addition to understanding the principles of the alphabet. Previous research has emphasized the significance of phonological awareness in reading and spoken fluency, particularly in alphabetical systems. Depending on that, phonological awareness contributes to overcoming some difficulties in reading development. Students gain phonological awareness by blending and segmenting words into phonemes. Phonological awareness strategies are very significant and make pronunciation and reading fluency much easier.

3. Methodology

The data utilized in this study have been sourced from publications available in Google Scholar and ResearchGate-indexed journals. The choice of Google Scholar and ResearchGate as resources was based on their accessibility as free databases. While the Scopus database is also available, it requires payment for access. The keyword "Phonological Awareness" was used to search for relevant articles, resulting in the selection of ten related articles from various educa-

tional journals published between 2020 and 2023.

Table 1 provides a summary of each research article, outlining details such as the research title and authors, participants, research design, data collection and analysis methods, research setting, and the findings.

Table 1 shows the content analysis of the ten articles published between 2020 and 2023 in educational journals such as a) Reading Psychology; b) Dirasat: Educational Sciences; c) International Journal of Early Childhood; d) The Journal of Education Research; e) Study of Applied Linguistics and English Education; f) Journal of Experimental Child Psychology; g) International Journal of Environmental Research

and Public Health; and h) Pamukkale University Journal of Education. The selected articles focus on the effects of phonological awareness on child literacy development and reading development. Five articles precisely analyze the elements of phonological awareness that contribute to reading development, whereas two articles focus on the effects of phonological awareness on child literacy. In general, the selection of the articles offers an understandable view of how phonological awareness is effective on child literacy and reading development. These ten articles were cross-analyzed according to research (Title & Authors), participants, research design, data collection, data analysis, research setting, and findings.

Table 1. Content Analysis of the Ten Selected Articles on Phonological Awareness.

No.	Research (Title, Authors & Journal)	Participants (Number & Type)	Research Design	Data Collection	Data Analysis	Research Setting	Results of the Articles
1	- "Phonological Awareness and Alphabetic Knowledge in Typically Developing English Language Learners Between the 3.6 to 6.6 Years" - Manjula Prabhu, Prabhu Shwetha & Haralakatta Shivananjappa Somashekara - <i>Reading Psychology</i> , 45:3,	60 typically developing children (20) each from Lower Kindergarten, Upper Kindergarten, and Grade 1	Experimental design	Phonological Awareness Tasks Interview Test	SPSS (version 17.0) one-way ANOVA	India 2023	The findings show that students who are learning English make big progress in understanding the sounds of the language and learning letters in the first three years of school.
2	- "The Effectiveness of an Educational Program Based on Phonological and Morphological Awareness in Improving Reading Skills of Third-Grade Students in Jordan" - Shadi Ahmad Beirar & Mohammad Fu'ad Al-Hawamdeh - <i>Dirasat: Educational Sciences</i> , Volume 50, No. 2, 2023	(60) Male and female school students	Quasi-Experimental Approach	Assessment tool for reading, approved by the Ministry of Education in Jordan.	Two-way ANOVA Two-way MANOVA	Jordan 2023	The findings revealed that there are statistically significant differences, as follows: First, in terms of reading skills, the experimental group benefited from the instructional strategy. Second, girls outperform males in terms of reading ability. Third, females outperform males in reading skills due to the combination of instructional methods and gender.
3	- "Technology-Based Assessment of Phonological Awareness In Kindergarten" - Renáta Kiss & Benő Csapó - <i>International Journal of Early Childhood</i>	311 kindergarteners	Experimental design	Phonological Awareness Test: contains 44 closed items	Rasch analysis Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM)	Hungary 2023	The results showed that the test is a reliable assessment tool for kindergarteners' phonological awareness skills, and segmentation tasks proved to be the most difficult parts of the test.
4	- "An Investigation of Students' Phonological Awareness in Speaking" - Ika Sastrawati, Haslinda, Salma, Fadillah N, Ibrahim R. - <i>English Language Journal Vol. 2 No. 2</i> ,	Five university students	quantitative methods	The test determines the number of syllables, phonology, and comprehension of speaking	data analysis to influence phonological awareness in reading comprehension.	Indonesia 2023	The results demonstrated that phonological awareness is stimulated through the development of specific metalinguistic abilities such as English spelling and pronunciation, the importance of word stress, and how it affects the logic of word pronunciation.
5	- "The Effect of Vocabulary and Phonological Awareness on Students' Reading Comprehension" - Heni Purwati - <i>Study of Applied Linguistics and English Education</i> , 3(2).	93 tenth-grade students	Experimental design	Vocabulary, phonology, and reading comprehension tests	SPSS program Pearson Product-Moment correlation.	Indonesia 2022	The findings revealed that the regression value of vocabulary and phonological awareness on reading comprehension was significant. Furthermore, vocabulary and phonological awareness make up 67.6% of the effect on students' reading comprehension.
6	- "Improving Phonological Awareness Skills of Young Learners of English in an EFL Context" - İrem Ay Akca & Çağla Atmaca - <i>Pamukkale University Journal of Education</i> , 56	56 students from the 5th, 6th, and 7th grades at a secondary state school	Experimental design	Phonological Awareness Skills Test. (pre-test, post-test design)	A non-parametric Friedman test Chi-square value.	Turkey 2022	The P.A.S.T. scores of the participants showed a statistically significant difference, according to the data. The results also showed how crucial it is to use a variety of activities to develop young learners' phonological awareness.

Table 1. Cont.

No.	Research (Title, Authors & Journal)	Participants (Number & Type)	Research Design	Data Collection	Data Analysis	Research Setting	Results of the Articles
7	- "Phonological Awareness in Arabic among Early Grade Teachers" - Hanady Bani Hani, Rana Alkhamra, Hala Alomari - <i>International Journal of Arabic-English Studies (IJAES)</i> Vol. 22, No.2, 2022	109 Arabic language teachers at kindergarten and primary grade levels.	Experimental design	Survey	SPSS version 20.0 (2011) Likert-type survey	Jordan. 2021	The results revealed that many teachers had poor knowledge of certain PA basics and did not properly evaluate PA or provide satisfactory and clear PA instruction in their classrooms. Still, the results showed that teachers with more teaching experience provide their students with more chances to complete PA activities in the classroom.
8	- "Phonological Awareness as the Foundation of Reading Acquisition in Students Reading in Transparent Orthography" - Vesela Milankov 1, Slavica Golubovi'c 2, Tatjana Krsti'c 3 and Špela Golubovi'c 1 - <i>International Journal of Environmental Research and Public Health</i>	689 primary school students in first through third grade	Experimental design	Phonological Awareness Test and the Gray Oral Reading Test	statistical package SPSS 20 (IBM Corp., Armonk, NY, USA). One-factor ANOVA, MANOVA, T-test, and Regression Analysis	Republic of Serbia. 2021	The results showed that the majority of students who took part in the research had average reading development. There was no major difference in reading among students of different grades. Students who have difficulty in reading have poorer phonological awareness than students who have no difficulty in reading.
9	- "Improving Reading Readiness in Kindergarten Children through Early Phonological Awareness Interventions." - Maha Bdeir, Rima Bahous and Mona Nabhani - <i>EDUCATION 3-13</i>	107 KG3 students (age range 5–6 years), four KG3 classes	quasi-experimental study	included intervention programme, observations, evaluation checklists, interviews, and PA skills tests.	Statistical Package for the Social Sciences (SPSS)	Lebanon (2020).	The results revealed that children in the experimental group exhibited significant improvement in PA skills and substantial improvement compared to their initial baseline performance results.
10	- "Using Phonological Awareness Strategies for Developing EFL Oral Reading Fluency among Primary School Pupils" - Gellan Abdel- Maksod, Eman Abdel-Haq & Magdy Amin - <i>Journal of Faculty of Education</i>	60 4th year primary school pupils	Experimental design	FL oral reading fluency checklist and an EFL oral reading fluency pre-posttest.	Statistical Package for Social Sciences (SPSS), version 18	Egypt 2020	Results revealed that the experimental group's EFL oral reading fluency improved significantly, whereas the control group used some phonological awareness strategies.

3.1. Research Instrument

To achieve the objectives of this study, a content analysis card was designed to reveal contemporary trends in the articles on phonological awareness (PA) between 2020 and 2023. This card was developed through the following procedures:

- Reviewing of previous literature that sought to reveal research trends in phonological awareness.
- Accessing scientific research specializing in phonological awareness.
- Reviewing research in the field of phonological awareness that used the bibliometric analysis method.
- Designing a content analysis card included the research title and authors, participants, research design, data collection and analysis methods, research setting, and findings.
- Selecting ten articles that are most appropriate for the current research and achieving its objectives.
- Analyzing the card content about contemporary trends in the studies of phonological awareness.

3.2. Data Analysis

The study followed the descriptive approach by using the content analysis method, which was based on describing the phenomenon under study in a quantitative manner to determine frequencies and percentages in the analysis of the articles. To achieve this, bibliometric analysis was used, that is, a quantitative research method that includes analyzing and evaluating scientific publications based on several bibliographic data. The descriptive bibliometric approach is generally based on analyzing the content of research and scientific theses to reveal their trends and to evaluate published research to measure scientific progress in different disciplines^[20]. In the field of phonological awareness, bibliometric analysis provides quantitative data that can be subjected to statistical analysis to arrive at useful indicators that may benefit researchers, educational policymakers, teachers, students, parents, and others interested in the field of education. In this study, bibliometric analysis was used to provide a quantitative description of contemporary research trends in

phonological awareness, considering the questions included in the current study.

3.3. Research Procedures

The researchers followed these procedures:

- An inventory of the articles on phonological awareness was selected during the years 2020–2023.
- Developing a content analysis card and verifying its validity and reliability.
- Using the Holisti equation to reveal the implications of the stability of the content analysis card.
- Using frequencies and percentages to answer the study questions.
- Entering data into SPSS and preparing statistical tables.
- Using VOS viewer software to create and analyze bibliometric data.
- Discussing the results and presenting recommendations and suggestions.

4. Results and Discussion

This section presents the results reached to answer the main research question of this study, which is about contemporary trends in the studies of phonological awareness, using statistical treatments to answer the study questions.

- Results related to the first question of the study.

What was the common concentration of the selected articles on phonological awareness?

To address the first research question, a comprehensive analysis was conducted on the body of literature published between 2020 and 2023. This analysis aimed to identify the predominant themes, areas of emphasis, and methodological trends within the selected studies. By examining key topics and recurring patterns, the study sought to understand how researchers have approached phonological awareness in recent years, particularly in relation to literacy development, reading development, speaking skill and technology-based assessment, shown in **Table 2**.

Table 2. The Common Concentration, Frequency, and Order of the Selected Articles on Phonological Awareness.

Concentration of Phonological Awareness Articles	No. of Articles (Frequency)	Percentage %	Order
Literacy development.	3	30%	2
Reading development	5	50%	1
Speaking skill	1	10%	3
Technology-Based Assessment	1	10%	3
Total	10	100%	-

Table 2 presents that three articles examine the impact of phonological awareness on child literacy development, accounting for 30% of the total, whereas five articles explore the influence of phonological awareness on reading development, making up 50% of the total. Additionally, one article investigates the effect of phonological awareness on speaking skills, contributing 10%, while another article focuses on technology-based assessment, also making up 10%. The three articles that examine the impact of phonological awareness on child literacy development are Prabhu et al.'s (study entitled "Phonological Awareness and Alphabetic Knowledge in Typically Developing English Language Learners Between the 3.6 to 6.6 Years"^[21]; Akca & Atmaca's study entitled, "Improving Phonological Awareness Skills of Young Learners of English in an EFL Context"^[22], and Bani Hani et al.'s study entitled, "Phonological Awareness in Arabic among Early Grade Teachers"^[23]. While there are five articles explore

the influence of phonological awareness on reading development, Beirat et al.'s study entitled "The Effectiveness of an Educational Program Based on Phonological and Morphological Awareness in Improving Reading Skills of Third-Grade Students in Jordan"^[24]; Purwatiet al.'s study entitled "The Effect of Vocabulary and Phonological Awareness on Students' Reading Comprehension"^[25]; Milankov et al.'s study entitled "Phonological Awareness as the Foundation of Reading Acquisition in Students Reading in Transparent Orthography"^[26]; Bdeir et al.'s study entitled "Improving reading readiness in kindergarten children through early phonological awareness interventions"^[27], and Abdel-Maksod et al.'s study entitled "Using Phonological Awareness Strategies for Developing EFL Oral Reading Fluency among Primary School Pupils"^[28]. However, Sastrawati et al.'s study, entitled "An Investigation of Students Phonological Awareness in Speaking", investigates phonological awareness in speaking skill^[29]. Though,

one article explores the effect of technology-Based Assessment of Phonological Awareness, Kiss & Csapó's study entitled, "Technology-Based Assessment of Phonological Awareness in Kindergarten"^[30]. Thus, the findings offer insights into prevalent academic interests and highlight the aspects of phonological awareness that have garnered the most scholarly attention during the specified period.

- Results related to the second question of the study.

What patterns were observed in selecting participants

in the selected articles on phonological awareness?

The second study question aimed to explore the patterns observed in participant selection within the selected articles on phonological awareness. This aspect of the analysis concentrated on kindergarten, primary school, kindergarten & primary school and university involved in this study. Understanding these patterns sheds light on the participants most frequently studied in phonological awareness research, as shown in **Table 3**.

Table 3. Percentage and Order of the Observed Patterns in Selecting Participants in the Selected Articles on Phonological Awareness.

Patterns of Participants	No. of Articles (Frequency)	Percentage %	Order
Kindergarten	2	20%	2
Primary school	5	50%	1
Kindergarten & Primary school	2	20%	2
University	1	10%	3
Total	10	100%	-

Table 3 demonstrates the pattern of participants, number of articles, and the percentage of the selected articles in phonological awareness. Across the ten articles, two (20%) used kindergarten students as their selected participants. These articles (Prabhu et al. examined the phonological awareness and alphabetic knowledge in typically developing English language learners between 3.6 to 6.6 Years^[21]; Kiss & Csapó focused on the technology-based assessment of phonological awareness in kindergarten^[30], and Bdeir et al. explored improving reading readiness in kindergarten children through early phonological awareness interventions^[27]. From these studies, there were five articles (50%) that used primary students as their participants, including those written by Prabhu Beirat et al., Purwati; Akca & Atmaca, Milankov et al., and Abdel-Maksod^[21, 22, 26, 28, 31]. Nevertheless, there were two (20%) articles focused on

Kindergarten & Primary school students as their selected participants, including those by Bani Hani et al. and Prabhu et al.^[21, 23]. On the other hand, there was one article (10%) that used university students as its selected participants to investigate students' phonological awareness in speaking, Sastrawati et al.^[29].

- Results related to the third question of the study.

What data collection tools were commonly used in the selected articles on phonological awareness?

The third study question aimed to identify the data collection tools most commonly used in the selected articles on phonological awareness. This analysis focused on the methodological instruments employed by researchers to assess various aspects of phonological awareness across different study contexts, as shown in **Table 4**.

Table 4. Percentage of the Data Collection Tools Commonly Used in the Selected Articles on Phonological Awareness.

Data Collection Tools	No. of Articles	Percentage %	Data Collection Tools
Interview	1	10%	2
Test	6	60%	1
Checklist	1	10%	2
Survey	1	10%	2
Observation	1	10%	2
Total	10	100%	-

Table 4 indicates the data collection tools, number of articles, percentage, and order of the data collection tools commonly used in the selected articles on phonological awareness. The articles employed a mixture of quantitative and qualitative approaches. From the ten articles, the majority of the articles (6 articles, 60%) used tests as a tool for collecting data on phonological awareness, including those written by Beirat et al., Kiss et al., Purwati, Sastrawati, Akca & Atmaca, and Milankov et al.^[12, 22, 24, 25, 30, 31], while the rest of the selected articles used: interviews (1 article used by Prabhu et al.^[21], 10%), checklist (1 article, 10% used by Abdel-Maksod et al.^[28]), survey (1 article, 10% used by Bani Hani et al.^[23]), and observation (1 article, 10% used by Bdeir et al.^[27]).

- Results related to the fourth question of the study.

What similarities were found in the results of the selected articles on phonological awareness?

The results of the selected articles revealed that phonological awareness was effective in developing child literacy, reading skills, speaking skills, and technology-based assessment of reading skills. Regarding child literacy, the results of Prabhu et al.'s study indicated that English Language Learners (ELL) demonstrated substantial advancements in both phonological awareness and alphabet knowledge during the initial three years of formal education^[21]. In addition, a similar article revealed the importance of employing various activities to improve the phonological awareness of young learners. Respectively, the results of Bani Hani et al.'s study revealed that many teachers had poor knowledge of certain PA fundamentals and did not formally assess PA or provide adequate and explicit PA instruction in their classrooms^[23]. Furthermore, the results showed that teachers with more teaching experience provide their students with more chances to complete PA activities in the classroom. On the other hand, there were five articles focused on the effect of phonological awareness on developing a reading skill, including those written by Beirat et al., Purwati, Milankov et al., Bdeir et al., and Abdel-Maksod et al.^[24, 26–28, 31]. The results of these articles established a strong relationship between phonological awareness and decoding, which will later lead to better reading comprehension. The results also showed that students who have difficulties in reading have poorer phonological awareness compared to students who have no difficulties in reading. The findings of this study agree with Míguez-Álvarez et al.^[8], who stated that phono-

logical awareness is directly related to success in learning to read, so people who have difficulty in reading tend to lack awareness of sounds or phonological decoding ability. Consequently, phonological awareness is one of the best predictors of how well children will learn to read during the first two years of instruction, as it is also the strongest predictor of later reading ability. Furthermore, phonological knowledge, developed through phonological awareness, was found to be effective in developing reading skills, even for readers with limited exposure to English^[32].

Table 5 focuses on methodological approaches, tools used, and key findings related to phonological awareness (PA). Regarding analytical approaches, the studies utilized a variety of quantitative and mixed-method designs, such as ANOVA/MANOVA: Commonly used (Studies 1, 2, 8), indicating comparisons across groups (e.g., grades, gender). Regression/Correlation: Used to assess predictive relationships (Study 5, 8). Non-parametric tests: Study 6 used the Friedman test, suitable for smaller or non-normally distributed samples. Structural Modeling (SEM/CFA): Study 3 employed advanced psychometric validation for a PA assessment tool. Descriptive and Survey-Based: Studies 4 and 7 focused on descriptive statistics and Likert-type responses. Experimental/Quasi-Experimental: Studies 9 and 10 evaluated intervention outcomes using pre-post designs. Concerning the key tools used, SPSS: Widely used statistical software (Studies 1, 2, 5, 6, 7, 8, 9, 10), indicating a focus on traditional statistical analysis. Custom Scoring/Observations/Interviews: Studies 4 and 9 incorporated qualitative elements, suggesting a broader exploration of PA, including behavioral aspects. Structural Modeling Tools: Study 3 highlights the use of Rasch, CFA, and SEM—modern, robust psychometric validation techniques. According to the summary of outcomes, PA and Literacy Skills: Consistently found to be strongly associated with reading and comprehension (Studies 5, 8, 10). Instructional Impact: Instructional programs and interventions significantly improved PA (Studies 2, 9, 10). Assessment Innovations: Digital tools and structural models proved useful in creating reliable PA assessments (Study 3). Demographic Effects: Gender and grade-level differences were noted (Studies 1, 2). Classroom Practices: Teacher experience and practices were shown to influence PA activity levels (Study 7). Skill Difficulty: Segmenting phonemes emerged as the most difficult PA skill (Study 3).

Table 5. Comparison of Analytical Approaches in Reviewed Phonological Awareness Articles ^[21–25, 27–31].

No.	Study (Author, Year)	Analysis/Classifier Approach	Key Metrics or Tools Used	Summary of Outcome
1	Prabhu et al. (2023) ^[21]	One-way ANOVA	SPSS v17.0	Significant differences are across grade levels in PA & AK
2	Beirat & Al-Hawamdeh (2023) ^[24]	Two-way ANOVA/MANOVA	SPSS	Instructional program is effective; gender differences are observed
3	Kiss & Csapó (2023) ^[31]	Rasch, CFA, SEM	Structural modeling	Reliable digital PA tests; segmentation is the most difficult
4	Sastrawati et al. (2023) ^[30]	Descriptive/Quantitative	Custom test scoring	Speaking-related PA is linked to metalinguistic abilities
5	Purwati (2022) ^[25]	Pearson Correlation/Regression	SPSS	Vocabulary and PA explain 67.6% of reading comprehension variance
6	Akca & Atmaca (2022) ^[22]	Friedman Test (non-parametric)	Chi-square	Pre-post tests differences are statistically significant
7	Bani Hani et al. (2022) ^[23]	Descriptive + Likert-scale Survey	SPSS v20.0	Experience is linked to more PA classroom activities
8	Milankov et al. (2021) ^[27]	ANOVA, MANOVA, Regression	SPSS v20	PA is strongly linked to reading; low PA in struggling readers
9	Bdeir et al. (2020) ^[28]	Quasi-experimental/Mixed methods	SPSS, Observations, Interviews	Significant PA improvement post-intervention
10	Abdel-Maksod et al. (2020) ^[29]	Experimental + Pre/Post Test	SPSS v18	Improved EFL reading fluency using PA strategies

5. Conclusions

The main aim of this study was to provide a comprehensive understanding of the current research in the field of phonological awareness and to examine the contemporary trends in phonological awareness studies in selected articles. Commonly, the findings of this study suggested that the predominant focus of these articles was on the effects of phonological awareness on reading development, with a particular emphasis on primary school students as participants. Additionally, regarding the data collection instrument, the results indicated that the majority of the articles utilized tests as an instrument for collecting data on phonological awareness. Furthermore, the results of the selected articles also demonstrated the effectiveness of phonological awareness in developing child literacy, reading skills, speaking skills, and technology-based assessment of reading skills. This study provides valuable insights into the current literature on the effects of phonological awareness on child literacy and reading development across various language settings. Interventions and instructional programs generally show positive outcomes, while PA remains a key predictor of reading success. However, results also highlight the variability in PA skill development, with segmentation often being the most challenging. To sum up, the discussion of this study has highlighted the common patterns and trends of contemporary studies, along with additional analysis of

the primary beliefs and reasoning behind each method or methodology. The generalizations based on these findings should be approached carefully, given the restricted number of articles included in the analysis. It is important to acknowledge that these findings' implications may not fully apply to a broader range of studies. Finally, the researchers recommended that future studies broaden the sample size by including more articles on phonological awareness and focusing on kindergarten and primary school students to gain a deeper understanding of collaborative efforts to address gaps in phonological awareness.

Author Contributions

Conceptualization, S.M.A.-Z. and M.K.A.; methodology, S.M.A.-Z.; software, M.K.A.; validation, S.M.A.-Z. and M.K.A.; formal analysis, S.M.A.-Z. and M.K.A.; investigation, S.M.A.-Z. and M.K.A.; resources, S.M.A.-Z. and M.K.A.; data curation, S.M.A.-Z.; writing—original draft preparation, S.M.A.-Z.; writing—review and editing, M.K.A.; visualization, M.K.A.; supervision, S.M.A.-Z.; project administration, S.M.A.-Z. All authors have read and agreed to the published version of the manuscript.

Funding

This work received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Data is accessible upon request.

Acknowledgments

We are grateful to the reviewers for their valuable comments.

Conflicts of Interest

The authors declare no conflict of interest.

References

- [1] Verissimo, L., Costa, M., Miranda, F., et al., 2021. The importance of phonological awareness in learning disabilities' prevention: Perspectives of pre-school and primary teachers. In *Frontiers in Education*. 6, 750328.
- [2] Lane, H.B., Pullen, P.C., 2014. *Phonological awareness assessment and instruction: A sound beginning*, 2nd ed. Pearson: Boston, MA, USA.
- [3] Dixon, L.Q., 2010. The importance of phonological awareness for the development of early English reading skills among bilingual Singaporean kindergartners. *International Journal of Bilingual Education and Bilingualism*. 13(6), 723–738. DOI: <https://doi.org/10.1080/13670050903556014>
- [4] Schuele, C.M., Boudreau, D., 2008. Phonological awareness intervention: Beyond the basics. *Language, Speech, and Hearing Services in Schools (LSHSS)*. 39(1), 3–20.
- [5] Kilpatrick, D.A., 2020. *Essentials of assessing, preventing, and overcoming reading difficulties*. Wiley: Hoboken, NJ, USA.
- [6] Gibbon, F.E., Scobbie, J.M., 2021. Developmental phonetics of speech production. In: *The Cambridge Handbook of Phonetics*. Cambridge University Press: Cambridge, UK.
- [7] Anthony, J.L., Francis, D.J., 2005. Development of phonological awareness. *Current Directions in Psychological Science*. 14(5), 255–259.
- [8] Tunmer, W.E., Rohl, M., 1991. Phonological Awareness and Reading Acquisition. In: Sawyer, D.J., Fox, B.J. (eds.). *Phonological Awareness in Reading*. Springer Series in Language and Communication, vol 28. Springer: New York, NY, USA. pp. 1–30. DOI: https://doi.org/10.1007/978-1-4612-3010-6_1
- [9] Nkurunziza, S., 2024. The Role of Phonological Awareness in Early Reading Development. *European Journal of Linguistics*. 3(3), 15–26. DOI: <https://doi.org/10.47941/ejl.2051>
- [10] Moats, L.C., Tolman, C.K., 2009. *Language essentials for teachers of reading and spelling*, 2nd ed. Sopris West: Boston, MA, USA.
- [11] Mohamed, A.H.H., Hassan, A.S., Al-Qaryouti, I., 2021. The development of phonological awareness among preschoolers. *Early Child Dev Care*. 191(1), 108–122. DOI: <https://doi.org/10.1080/03004430.2019.1607320>
- [12] Liow, S.J., Poon, K.K., 1998. Phonological awareness in multilingual Chinese children. *Applied Psycholinguistics*. 19(3), 339–62.
- [13] O'Brien, B.A., Mohamed, M.B.H., Yussof, N.T., et al., 2019. The phonological awareness relation to early reading in English for three groups of simultaneous bilingual children. *Reading and Writing*. 32, 909–937. DOI: <https://doi.org/10.1007/s11145-018-9890-1>
- [14] Hesham, S., Afsah, O., Baz, H., 2024. Exploring phonological awareness skills in Arabic-speaking children with borderline intellectual functioning and poor reading. *The Egyptian Journal of Otolaryngology*. 40(1), 58. DOI: <https://doi.org/10.1186/s43163-024-00605-5>
- [15] Al-Ghazo, A., Smadi, O.M., 2013. A content analysis of the English reading text's authenticity in student's book of Action Pack Eleven in Jordan. *European Scientific Journal*. 9(29), 342–357.
- [16] Makhoul, B., 2017. Moving Beyond Phonological Awareness: The Role of Phonological Awareness Skills in Arabic Reading Development. *Journal of Psycholinguistic Research*. 46, 469–480. DOI: <http://dx.doi.org/10.1007/s10936-016-9447-x>
- [17] Vloedgraven, J., Verhoeven, L., 2007. Screening of phonological awareness in the early elementary grades: an IRT approach. *Ann Dyslexia*. 57(1), 33–50. DOI: [doi:10.1007/s11881-007-0001-2](https://doi.org/10.1007/s11881-007-0001-2)
- [18] Ziegler, J.C., Goswami, U., 2005. Reading acquisition, developmental dyslexia, and skilled reading across languages: A psycholinguistic grain size theory. *Psychological Bulletin*. 131(1), 3–29. DOI: <https://doi.org/10.1037/0033-2909.131.1.3>
- [19] Stackhouse, J., Wells, B., 1997. *Children's speech and literacy difficulties: A psycholinguistic framework*. Whurr: London, UK.
- [20] Kalantari, A., Kamsin, A., Kamaruddin, H.S., et al., 2017. A bibliometric approach to tracking big data research trends. *Journal of Big Data*. 4(1), 30. DOI: <https://doi.org/10.1186/s40537-017-0088-1>
- [21] Prabhu, M., Shwetha, P., Somashekara, H., 2023.

- Phonological awareness and alphabetic knowledge in typically developing English language learners between the 3.6 to 6.6 years. *Reading Psychology*. 45(3), 242–260. DOI: <https://doi.org/10.1080/02702711.2023.2276463>
- [22] Akca, İ.A., Atmaca, Ç., 2022. Improving phonological awareness skills of young learners of English in an EFL context. *Pamukkale University Journal of Education*. 56, 314–335. DOI: <https://doi.org/10.9779/pauefd.1033281>
- [23] Bani Hani, H., Alkhamra, R., Alomari, A.A., et al., 2021. Phonological awareness in Arabic among early grade teachers. *International Journal of Arabic English Studies*. 22(2), 171–192. DOI: <https://doi.org/10.33806/ijaes2000.22.2.10>
- [24] Beirat, S.A., Al-Hawamdeh, M.F., 2023. The effectiveness of an educational program based on phonological and morphological awareness in improving reading skills of third-grade students in Jordan. *Dirasat Educational Sciences*. 50(2), 491–508. DOI: <https://doi.org/10.35516/edu.v50i2.790>
- [25] Purwati, H., 2022. The effect of vocabulary and phonological awareness on students' reading comprehension. *Studies in Applied Linguistics and English Education*. 3(2), 170–183. DOI: <https://doi.org/10.35961/salee.v3i2.465>
- [26] Pratiwi, A.S., Lestari, A.T., Dewi, R.S., et al., 2020. Students' phonological awareness in PAUD IT Ihya As-sunah. *Journal of Physics Conference Series*. 1477(4), 042069. DOI: <https://doi.org/10.1088/1742-6596/1477/4/042069>
- [27] Milankov, V., Golubović, S., Krstić, T., et al., 2021. Phonological awareness as the foundation of reading acquisition in students reading in transparent orthography. *International Journal of Environmental Research and Public Health*. 18(10), 5440. DOI: <https://doi.org/10.3390/ijerph18105440>
- [28] Bdeir, M., Bahous, R., Nabhani, M., 2020. Improving reading readiness in kindergarten children through early phonological awareness interventions. *Education* 3-13. 50(3), 348–360. DOI: <https://doi.org/10.1080/03004279.2020.1851740>
- [29] Abdel-Maksod, G., Abdel-Haq, E., Amin, M., 2020. Using phonological awareness strategies for developing EFL oral reading fluency among primary school pupils. *Journal of Faculty of Education*. 121(4). DOI: <https://doi.org/10.21608/jfeb.2020.122522>
- [30] Sastrawati, I., Haslinda, Salma, F., et al., 2023. An investigation of students' phonological awareness in speaking. *BATARA DIDI: English Language Journal*. 2(2), 1–10. DOI: <https://doi.org/10.56209/badi.v2i2.86>
- [31] Kiss, R., Csapó, B., 2024. Technology-based assessment of phonological awareness in kindergarten. *English Language Journal*. 57, 25–49. DOI: <https://doi.org/10.1007/s13158-023-00386-7>
- [32] Jamaludin, A., Alias, N., Johari, R., 2014. Research and trends in the studies of phonological knowledge and reading development: A review on selected journals. *Malaysian Online Journal of Educational Science*. 2(2), 27–36.