

Research on early literacy in Reggio and Montessori classrooms: A scoping review

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Abstract

This article presents the findings of a scoping review of 26 empirical studies that examined early literacy in Reggio Emilia and Montessori classrooms. A five-stage framework for conducting scoping reviews was used and led to the review of the selected studies. In addition, a thematic content analysis was conducted resulting in four main themes associated with the studies: 1. avenues for literacy learning, 2. home-school connection, 3. early literacy advantages, and 4. enriched literacy environments. The study contexts, research methods, and other relevant study characteristics are also reviewed and discussed. The results shed light on the research that has been conducted on early literacy in Reggio and Montessori environments. In addition, patterns across the two contexts are discussed and suggestions about future research are offered.

Keywords

early literacy, Reggio Emilia, Montessori, early childhood education

Introduction

Researchers recognize the critical importance of early childhood educators and programs in supporting children's early literacy development (Lonigan and Shanahan, 2009; Piasta et al., 2010). In fact, research has shown a direct link between early literacy and later academic achievement, suggesting that early years instructional approaches can have an enormous impact on an individual's literacy achievements throughout their academic career and beyond (Sparks et al., 2014; Stanley et al., 2018). Children who fall behind in reading in the

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early primary grades, for instance, too often remain behind beyond the elementary level. While studies have revealed a strong connection between early literacy and later academic achievement, the majority of these studies have been conducted with traditional schools and early childhood environments; less is known about the empirical studies that have examined early literacy in non-traditional contexts, such as schools that follow a Reggio Emilia or Montessori approach (Courtier et al., 2021; İnan, 2021). Researching how early literacy is fostered in contexts outside of more traditional schooling is particularly important given the popularity of such approaches across the globe (Association Montessori Internationale, 2022; North American Reggio Emilia Alliance, 2022). The primary aim of this scoping review, therefore, is to identify and synthesize the research that has been conducted on early literacy in Reggio and Montessori contexts. Although this review is not meant to directly compare Reggio and Montessori approaches, a secondary aim is to identify key themes within and across these two well-established early years approaches with respect to literacy. The outcomes of this review can be leveraged for future research in this area.

This article begins with a review of the literature, in which the core elements of early literacy are discussed. An overview of the Reggio and Montessori approaches are then provided. The literature review is followed by the methods section which includes a summary of the five-stage framework that was adopted for this scoping review. The methods section is followed by the results and a discussion of the research implications.

Early literacy

Early literacy is the term often associated with preparing children to become literate in the 21st century; it's what children experience and know before they can actually read and write fluently and involves both meaning-focused and code-focused skills (Gough and Tunmer, 1986; Snow, 2017; Teale et al., 2010). Researchers generally agree that early literacy involves developing oral language, vocabulary, listening comprehension, and phonological awareness, as well as early decoding skills, print awareness, letter knowledge, and early skills in composition (e.g., Lonigan and Shanahan, 2009; Rand and Morrow, 2021; Snow, 2017). These language-related and print-related skills are often incorporated into identifiable instructional activities and are essential components of any quality early childhood program (Teale et al., 2010). For instance, instructional activities that use guided and free play in early childhood programs have been shown to be important vehicles for oral language

development (Pyle et al., 2018; Rand and Morrow, 2021). In particular, negotiating different roles during play has been shown to provide children with opportunities to practice encoding meaning through language (Rand and Morrow, 2021). Print-related activities, such as sorting objects based on their letters and relating the letter names to their corresponding sounds, are also part of a quality early literacy program (Piasta et al., 2010).

In more recent years, and as a response to the New London Group's introduction of multiliteracies pedagogy (1996), researchers have suggested digital literacy be incorporated into early literacy as well (e.g., Deklerk, 2020; Wohlwend, 2015). Multiliteracies are related to multimodalities which involve diverse modes of communication allowing for different approaches of expression (The New London Group, 1996). In early childhood programs, a multimodal approach can provide children with multiple ways for learning and engaging in literacy (Deklerk, 2020). Deklerk (2020) suggests that varying modes through which literacy can take place "expands our lens of what qualifies as literacy skills and developmental practices" (74). One of these modes that differs from the more traditional forms of print is digital technologies. Wohlwend (2015), for instance, observed children as young as two interact collaboratively with tablets and create digital stories and puppet shows. This type of "collaborative composing" gives children opportunities to interact with technology and extend their literacy concepts beyond print (Wohlwend, 2015, 4).

It is critically important that children are exposed to language and literacy-rich environments and instructional activities (Sparks et al., 2014; Stanley et al., 2018; Teale et al., 2010). When children do not have access to early literacy, there can be significant gaps in their knowledge and overall academic success. For instance, Sparks et al. (2014) conducted a longitudinal study examining the relationship between children's early literacy skills and their reading comprehension scores in tenth grade. Findings clearly showed that first grade reading skills were a strong predictor of tenth grade outcomes confirming the long-term benefits of providing children with early literacy experiences. In a similar longitudinal study that used a sample of 3180 students from across 44 school districts in Florida, Stanley et al. (2018) found direct and indirect relations between and among kindergarten, third grade, and tenth grade literacy measures. For instance, phonological and decoding skills were significantly related to third grade reading achievement. Third grade vocabulary and tenth grade reading comprehension were also positively associated. In addition, indirect and direct pathways from vocabulary in kindergarten to tenth grade reading comprehension were found as a result of a structural equation model

analysis. The authors concluded that their results corroborate research showing long-term benefits of early literacy experiences.

Researchers have examined specific interventions and programming related to early literacy. For instance, [Piasta et al. \(2010\)](#) examined children's alphabet knowledge, phonological awareness, letter-word identification, emergent reading, and developmental spelling on pre- and post-test measures. Following thirty-four 15 minutes lessons that combined letter name and sound instruction (versus sound only), children's letter-sound acquisition significantly improved. Additionally, [Schuele et al. \(2008\)](#) found that lower-achieving children in a supplemental phonological awareness program, which included activities involving listening skills, rhyme, segmenting sentences and words, and spelling simple words, improved on literacy outcomes at the end of the 12-week program. Moreover, [Lerner and Lonigan \(2016\)](#) examined the bidirectional relations between letter knowledge and phonological awareness during pre-school. The 358 children in their study were assessed using a variety measures related to phonological awareness and alphabet knowledge (e.g., phoneme blending, rhyme matching, letter-sound knowledge). Findings indicated that these two early literacy skills, letter knowledge and phonological awareness, each uniquely predicted growth in the other. Similar findings have been found with at risk populations. [Bailet et al. \(2013\)](#), for instance, conducted a multiyear cluster-randomized controlled trial on the effectiveness of an emergent literacy intervention for prekindergarten children at risk for a future reading disability. The intervention, which occurred over three years and included 72 children, targeted emergent literacy skills including phonological awareness, alphabet knowledge, and vocabulary skills. Results showed that the intervention had a positive impact on the children's literacy skills across the three years.

Taken together, findings from studies such as the ones cited above, clearly indicate the critical importance of targeted early literacy and the influence of early literacy on later academic achievement. Much of the research on early literacy, however, has focused on specific school boards and public school districts; less is known about the studies that have examined early literacy in non-traditional contexts, like Reggio and Montessori ([Courtier et al., 2021](#); [İnan, 2021](#); [Soundy, 2003](#)). Given the immense popularity of these two approaches across the globe ([Association Montessori Internationale, 2022](#); [North American Reggio Emilia Alliance, 2022](#)), it is essential to identify the research that has been conducted on literacy in Reggio and Montessori environments. As a result, we can leverage study findings and methodological approaches to continue the conversation of early literacy across geographic and programmatic contexts. Before discussing the methods used

for this scoping review, brief overviews of the Reggio Emilia and Montessori approaches are described.

The Reggio Emilia approach

Based on the theoretical assumption that children are socially active in the construction and determination of their lives, the Reggio Emilia approach is rooted in Vygotsky's social constructivist theory and was developed in the northern Italian city Reggio Emilia by early childhood educator Loris [Malaguzzi \(2012\)](#). Malaguzzi believed that all children are naturally curious, capable of constructing their own learning in an environment that invites them to collaborate with their peers and provides them with a sense of ownership and autonomy ([Gandini, 2012](#)). Project-learning, inquiry, and documentation are important components of any Reggio classroom along with a general philosophy that children are able to express themselves through their "hundred languages" ([Gandini, 2012](#)). This term, "hundred languages" was first used by Malaguzzi in a poem he wrote ([Malaguzzi, 2012](#)) and has since become a key principle of the Reggio approach. It refers to communication and emphasizes the importance of providing children with one hundred ways to share their thinking of the world around them. Aligned with social constructivist theory, children are guided by their curiosity and interest to produce communication in and with the world in multiple ways (the hundred languages). Through paint, puppetry, dance, music, drama, and collage, to name a few, children have numerous opportunities to express themselves and their ideas.

In a Reggio-inspired classroom, literacy is integrated through play and the projects undertaken by the children ([Rubizzi and Bonilauri, 2012](#)). Children take a constructive role in the process of knowledge building; they're encouraged to recognize reading and writing as much more than learning the alphabet and maintain that literacy is not only about learning the code but also discovering the rules by which the code functions ([Rubizzi and Bonilauri, 2012](#)).

The Reggio environment itself acts as a third teacher, supporting language and literacy learning and providing enriched opportunities for experimentation and exploration, both of which can provoke literacy-play activities ([Rubizzi and Bonilauri, 2012](#)). Literacy-rich play environments with adaptable materials and props contribute to children's problem-solving skills and creativity. It is through these rich environments and the children's explorations and projects where language is fostered—children question, discuss, hypothesize, and observe; they expand their vocabulary and hone their oral language skills.

Reading and writing are viewed as tools for communication and stem from oral language as well as from opportunities to develop phonological awareness and letter-sound knowledge. Writing materials are often placed systematically throughout the room to encourage children to write and make marks (Logaridis et al., 2012). It is suggested that through these writing experiences, children develop their knowledge about print and begin to understand the purpose of conveying a message through multiple modes (Rubizzi and Bonilauri, 2012).

Along with writing centres, early literacy skills are nurtured through provocations, songs and rhymes, books, labels around the room, and story-telling. A literacy-focused provocation, for instance, might include a table with inviting letter tiles, alphabet rubber stamps or stencils, wooden letters, or sand paper letters. The teacher facilitates children's learning directly and indirectly, and primarily by way of the children's interests. If a child is interested in writing a word to represent an object, for instance, the teacher will work alongside the child, supporting them in attending to the sounds in the word and forming the letters. Another example of literacy in a Reggio classroom might occur while a child is engaged in an inquiry project. The child might realize that notes and signs are needed to inform those passing by of the components of a particular display.

The Montessori approach

The Montessori approach is based on the belief that children should learn in a favourable environment that allows them freedom of movement, choice, and personal responsibility (Feez, 2009). Aligned with theories of child development, including Piaget's cognitive development theory in which he posited that as children's thinking develops from one stage to the next, their behavior also changes, reflecting these cognitive developments (Piaget, 1972), the Montessori approach views the child as capable of independently initiating learning in a supportive and thoughtfully prepared environment. The founder, Maria Montessori, was an Italian clinician who worked tirelessly in the field of family medicine, particularly with socially disadvantaged women and children (Lillard, 1996). In 1907, she established the first Casa dei Bambini or Children's House in Rome (Lillard, 1996). At that time in Italy and much around the world, children's natural curiosity to explore the environment and self-select materials and activities was not a mainstream educational objective. The idea of having a child take the lead in their own learning was a progressive one. Montessori saw learning as holistic, where the whole child develops physically, intellectually, socially, and emotionally (Montessori, 2013).

Similar to the Reggio approach, in a Montessori classroom literacy development is rooted in a language-rich environment where print is around the room and accessible to children. Educators engage children in language through conversations, storytelling, rhymes, and songs. Children begin building onto their language skills with games and lessons associated with phonological and phonemic awareness (Feez, 2009). Isolating and manipulating individual sounds in spoken words (phonemic awareness) sets a foundation for spelling and word recognition skills. In a Montessori program children begin encoding or writing words before reading (although the two certainly go hand-in-hand). Once a child has begun to associate phonemes with the corresponding letter or combination of letters, they start blending the letters together to create and write words. The teachers consistently refer to the letter symbols by the sounds they make so the children learn the sounds before they learn the letter names.

Learning the letter sounds and beginning to blend sounds together to make words is a systematic and explicit process, as well as a multisensory one (Feez, 2009). Reading and writing are visual, auditory, and tactile activities. For instance, the Sandpaper Letters activity provides children with an opportunity to hone their alphabet knowledge through multiple senses. As children say the sound of the letter they feel the shape of the letter by tracing them in sand with their fingers. The tactile and multisensory experience can be engaging and a focus for children's attention. The order in which the letter sounds are introduced is systematic, where a set of letter sounds, like /s/, /m/, /a/, and /t/, are taught together. This allows the child to begin to make and read words right away. As a child works through the sets of letter sounds, they also begin to read from decodable or phonetic books. These print-based activities are done in conjunction with language-related activities, like building vocabulary and oral language skills through read alouds, storytelling, and speaking during circle time (or any time of the day).

Teacher guides and curriculum texts have been written about Reggio and Montessori approaches, supporting teachers and school administrators in establishing Reggio and Montessori schools and implementing curricula. These types of texts provide educators with philosophies, learning objectives, and materials for each approach. Empirical work documenting literacy in Reggio and Montessori environments, however, is limited. As such, this scoping review sheds some light on the empirical studies that have been conducted on early literacy in Reggio and Montessori contexts. Two goals of this review are to identify and synthesize relevant studies as well as identify themes that exist

within and across Reggio and Montessori contexts. Based on the reviewed studies, guidelines are offered to researchers interested in investigating early literacy in Reggio and Montessori environments.

Method

This review followed a five-stage framework specifically designed for conducting scoping reviews and “achieving in-depth and broad results” (Arksey and O’Malley, 2005: 22). In the context of this article, this five-stage framework provided an appropriate procedure for identifying and synthesizing the research that has been conducted on literacy in Reggio and Montessori classrooms. The five stages included: (1) identifying the research questions, (2) identifying relevant studies, (3) selecting the studies, (4) charting the data, and (5) summarizing and reporting the results (Arksey and O’Malley, 2005). In addition, a thematic content analysis was conducted on the selected articles to answer the first research sub-question. Details on the thematic content analysis procedure are described below.

Research questions

This review was guided by five research questions: (1) What are the main themes associated with the reviewed studies examining literacy in Reggio and Montessori classrooms? (2) What does the research literature tell us about the patterns that exist across Reggio and Montessori contexts? (3) What methods have been used to document literacy in Reggio and Montessori classrooms? (4) How do geographical contexts compare? and (5) What other characteristics of the reviewed studies can inform future research?

Identifying relevant studies

The main database chosen for this review was EBSCOHost since this catalogue allows users to search numerous interdisciplinary databases simultaneously. Searches were conducted using specified keywords and filters (see Table 1). Separate searches were used with the keywords *literacy*, *language*, and *reading* to generate the largest possible number of relevant articles. Additionally, the keywords were entered in non-specified fields (i.e., author, title, etc.) and the date range was left open-ended. Searches were limited to English peer-reviewed journal articles to access relevant studies. As a result of the database search, a total of 890 articles were retrieved.

Table 1. Initial review search results.

Keywords	Search results
Montessori AND literacy	31
Montessori AND language	292
Montessori AND reading	68
Reggio Emilia AND literacy	50
Reggio Emilia AND language	341
Reggio Emilia AND reading	108
Total	890

Selecting the studies

Following each search, article titles and abstracts were reviewed for relevance. Along with being from English peer-reviewed journals, selected studies met the following inclusion criteria: (1) empirically-based research designs including qualitative and/or quantitative methods, (2) studies focused on early years, kindergarten, and elementary contexts, (3) studies that had a clear literacy focus, and (4) studies that examined programs and/or classes that specifically included or were influenced by the Montessori and/or Reggio Emilia approaches. The second and last criterion were especially helpful in narrowing down the number of articles. For instance, most articles resulting from the keyword combinations *Reggio Emilia AND reading* and *Reggio Emilia AND language* were health-related studies conducted by researchers from the city Reggio Emilia, and thus excluded from the review. Similarly, several of the resulting studies used a Montessori approach with aging individuals with dementia. Articles such as these were also excluded. The search *Montessori AND language* garnered many articles that were overviews of language practices and instructional highlights rather than empirical studies. These articles were also excluded from the review. It is important to keep in mind that the search may have omitted relevant articles that were written in a language other than English as well as articles that did not include the keywords Montessori and Reggio but were indeed conducted in these contexts.

In total, 37 articles met the above criteria. Given the relatively small number of articles that resulted from narrowing the search, the reference list from each article was reviewed for additional studies. Abstracts of potential studies for inclusion were reviewed resulting in four additional studies all of which were related to Montessori. As such, a total of 41 studies were identified. However, three articles resulting from the search *Montessori AND literacy* and *Montessori AND reading*, and one article resulting from *Reggio AND literacy* and *Reggio AND reading* were duplicates. Additionally, four articles resulting from *Montessori AND literacy* and *Montessori AND language* were duplicates, and two articles resulting from *Reggio Emilia AND literacy* and *Reggio Emilia AND language* were duplicates. Thus, 31 studies were selected for further review. [Table 2](#) breaks down the number of studies

Table 2. Number of selected studies.

Keywords	Number
Montessori AND literacy	6
Montessori AND language	6
Montessori AND reading	5
Reggio Emilia AND literacy	6
Reggio Emilia AND language	4
Reggio Emilia AND reading	1
Reference lists	4
Total	31

resulting from each keyword combination and the reference lists. The 31 selected studies were then read in full to ensure that they did indeed meet the criteria for inclusion.

Charting the data

This next stage involved charting key items of information related to the research questions. As [Arksey and O'Malley \(2005\)](#) discuss, “charting

describes a technique for synthesizing and interpreting qualitative data by sifting, charting and sorting material according to key issues and themes” (26). This involved entering relevant data from the articles into an Excel spreadsheet, including the article’s citation, country of origin, research design, study population, literacy skills discussed, and key findings. As each article was read in-depth a final decision about which articles would be included in the analysis and results was made. It was determined that four of the articles related to Montessori and one article related to Reggio were reviews rather than empirical studies. As such, these articles were omitted from the review resulting in 26 empirical studies (see [Table 3](#) for a complete list of studies). In line with [Arksey and O'Malley's \(2005\)](#) framework, results are summarized and reported below.

Thematic content analysis

[Braun and Clarke's \(2006\)](#) six phases of a thematic content analysis was followed to answer the first research question: What are the main themes

Table 3. Complete list of studies.

Approach	N	Studies
Montessori	16	Aydoğan (2016) ; Bryan-Silva and Sanders-Smith (2021) ; Buldur and Gokkus (2021) ; Chavarría (2021) ; Courtier et al. (2021) ; Del Grande (1976) ; Elben and Nicholson (2017) ; Hendi and Asmawi (2018) ; Lopata et al. (2005) ; Lillard (2012) ; Musa and Adeyinka (2021) ; Pérez-Pérez et al. (2021) ; Rule and Barrera (2003) ; Soundy (2003) ; Suortti and Lipponen (2016) ; Veeranna et al. (2011)
Reggio Emilia	10	Beltschenko (2016) ; Henningsen (2013) ; Hughes and Wineman (2009) ; Kim and Darling (2012) ; Magnusson (2021) ; McWilliams et al. (2014) ; Nilsson (2018) ; Rhoades (2016) ; Souto-Manning and James (2008) ; Zhang et al. (2010)

associated with research examining literacy in Reggio and Montessori classrooms? First, the studies were read and re-read in full and initial ideas were noted (phase 1: *familiarizing yourself with the data*). The next step involved coding interesting features of the studies (phase 2: *generating initial codes*). For example, several of the studies that used quantitative methods to examine literacy skills in Montessori contexts showed that children in the Montessori conditions performed significantly better on post-test measures than children in the traditional classroom conditions, and thus the code *group differences* was created. The third phase of the thematic analysis involved collating codes into potential themes (phase 3: *searching for themes*). Those studies that found a difference in children’s performance and were initially coded *group differences*, for example, were delineated the theme *early literacy advantage*. Themes were then reviewed in relation to the coded extracts and the entire data set (phase 4: *reviewing the themes*). Themes were refined and clear definitions and names were given to each theme (phase 5: *defining and naming themes*). Table 4 presents an overview of the themes that resulted from the analysis. Each theme is described in detail in the discussion section (phase 6: *producing the report*).

Table 4. Themes of selected studies.

Theme	Description	n	Studies
Avenues for literacy learning	Literacy learning occurs through the arts, inquiry, and play.	7	Henningsen (2013) ; Hughes and Wineman (2009) ; Kim and Darling (2012) ; Magnusson (2021) ; Nilsson et al. (2018) ; Rhoades (2016) ; Souto-Manning and James (2008)
Home-school connection	Combining home and school literacy learning.	2	Bryan-Silva and Sanders-Smith (2021) ; McWilliams et al. (2014)
Early literacy advantages	Early literacy learning is impacted by montessori and reggio approaches.	11	Aydoğan (2016) ; Buldur and Gokkus (2021) ; Courtier et al. (2021) ; Del Grande (1976) ; Elben and Nicholson (2017) ; Lillard (2012) Lopata et al. (2005) ; Musa and Adeyinka (2021) ; Rule and Barrera (2003) ; Suortti and Lipponen (2016) ; Zhang et al. (2010)
Enriched literacy environments	Classroom materials and spaces enrich literacy learning.	6	Beltchenko (2016) ; Chavarría (2021) ; Hendi and Asmawi (2018) ; Pérez-Pérez et al. (2021) ; Soundy (2003) ; Veeranna et al. (2011)

Results and discussion

What Are the Main Themes Associated With Research Examining Literacy in Reggio and Montessori Classrooms?

Four main themes resulted from the thematic content analysis (as shown in Table 4): avenues for literacy learning, home-school connection, early literacy advantages, and enriched literacy environments. Seven of the studies, all of which focused on Reggio-inspired classrooms, examined *avenues for literacy learning*. These avenues or means for supporting children's literacy development included the arts, inquiry, and play. A *home-school connection* was discussed in two of the reviewed articles. Although this theme appeared only twice, it was deemed significant enough to be its own theme since Maria Montessori viewed literacy learning as a community experience. As shown in Table 4, results of 11 of the reviewed articles found that there was at least an initial *early literacy advantage* when children learned in a Reggio ($n = 1$) or Montessori ($n = 10$) classroom. Finally, six of the reviewed articles discussed how Montessori ($n = 4$) and Reggio ($n = 2$) classroom materials and spaces enriched early literacy learning (*enriched literacy environments*). These themes are further examined in the general discussion section.

What does the research literature tell us about the patterns that exist across Reggio and Montessori contexts?

Based on the reviewed studies, two main patterns across Reggio and Montessori contexts were identified. First, studies across Reggio and Montessori contexts show the importance of fostering a language-rich environment and promoting oral language development. The reviewed studies also demonstrate how both Reggio and Montessori approaches emphasize writing as a tool for communication. These patterns are detailed below in the general discussion section.

What Methods Have Been Used To Document Literacy in Reggio and Montessori Classrooms?

As presented in Table 5, most of the reviewed studies used a quantitative approach ($n = 11$). More specifically, a pre post-test experimental design was the main methodological approach for seven of the reviewed studies. All of the studies that employed a quantitative research design were those that examined literacy in a Montessori context. For instance, Finnish researchers Suorti and Lipponen (2016), assessed the phonological awareness skills, vocabulary, and early reading skills of 110 two to five year old children over six months. The

Table 5. Methods used in reviewed studies.

Approach	Methods	n	Studies
Quantitative	Pretest-posttest experimental design	9	Aydoğan (2016) ; Buldur and Gokkus (2021) ; Courtier et al. (2021) ; Elben and Nicholson (2017) ; Lopata et al. (2005) ; Lillard (2012) ; Musa and Adeyinka (2021) ; Rule and Barrera (2003) ; Suortti and Lipponen (2016)
	Questionnaire	2	Del Grande (1976) ; Veeranna et al. (2011)
Qualitative	Case study	3	Bryan-Silva and Sanders-Smith (2021) ; Chavarría (2021) ; Hendi and Asmawi (2018)
	Observational	6	Beltchenko (2016) ; Hughes and Wineman (2009) ; Kim and Darling (2012) ; McWilliams et al. (2014) ; Rhoades (2016) ; Soundy (2003)
	Narrative inquiry	1	Henningsen (2013)
	Ethnography	3	Magnusson (2021) ; Nilsson et al. (2018) ; Souto-Manning and James (2008)
Mixed methods	Mixed methods	1	Pérez-Pérez et al. (2021)
	Single-subject research design	1	Zhang et al. (2010)

results showed that only the children’s performance in the different phonological tasks improved over the six months. These tasks included phoneme judgement, phoneme play, phoneme synthesis, rhyme production and initial sound judgement. [Aydoğan \(2016\)](#), [Bryan-Silva and Sanders-Smith \(2021\)](#), and [Buldur and Gokkus \(2021\)](#) also found that children who were exposed to a Montessori education program had an advantage in early literacy development. However, in their longitudinal study, [Elben and Nicholson \(2017\)](#) found mixed results. They used German measures to assess the phonological awareness, reading comprehension, and alphabet knowledge of children in first grade (two classes were Montessori and one was a class in a state school). As described above, when compared with the state school, the children in the Montessori schools had an initial advantage over the children in the state school in alphabet knowledge. At the end of first grade, however, the initial advantage did not translate into an advantage in reading or phonological awareness. [Courtier et al. \(2021\)](#) and [Lopata et al. \(2005\)](#) also found mixed results.

The reviewed studies that explored literacy in a Reggio classroom all used qualitative methodological research designs, including case study, observations, narrative inquiry, and ethnography. For instance, in their

ethnographic study Magnusson (2021) analyzed literacy events from a sociocultural perspective using a multimodal lens which involved examining photographs and video recordings of five preschool classes or ateliers over 18 months. They found that literacy events, such as name writing while interacting with a digital projector, became playful explorations. The children across the five preschool classrooms explored written and oral language as part of the visual and aesthetic literacy practices occurring in the learning spaces. Additionally, through observations and narrative inquiry, Henningsen (2013) illustrated the direct relationship between numeracy and literacy development, particularly when children are engaged in inquiry. Souto-Manning and James (2008) also found that inquiry and the arts provided “many ways of knowing and doing, reflected multiple literacies, and allowed children to develop true choice and ownership” (91).

Less common was the use of mixed methods ($n = 2$). In their study, Pérez-Pérez et al. (2021) used a mixed method design to examine the different ways children with and without communication disorders interact with Montessori materials. Results on open-ended and goal-oriented activities were compared using quantitative methods while interview transcripts with teachers about the activities were analyzed qualitatively. Zhang et al. (2010) also used mixed methods in their study. A single-subject case design was used to examine how the Reggio Emilia approach facilitated the development of play and literacy with one child. Five variables were observed and two measures were used to code the type of play and assess literacy skills over a period of 26 days. Zhang et al.'s (2010) results showed the benefits of literacy development for the participating child within a play-based learning environment.

How Do Geographical Contexts Compare?

Table 6 presents the contexts of the reviewed studies. Most of the reviewed studies were conducted in North America: in the United States ($n = 10$), Mexico ($n = 1$), Canada ($n = 1$), and Puerto Rico ($n = 1$). Three studies occurred in a Middle Eastern country while seven studies were based in a European country, including Spain (Pérez-Pérez et al., 2021), Switzerland (Elben and Nicholson, 2017), and France (Courtier et al., 2021). Additionally, one study took place in Malaysia (Hendi and Asmawi, 2018), one study was conducted in Nigeria (Musa and Adeyinka, 2021), and one in India (Veeranna et al., 2011). Interestingly, only one study occurred in Italy, the birthplace of both Montessori and Reggio. However, it is likely that

Table 6. Geographical contexts of reviewed studies.

Country	n	Studies
United States	10	Del Grande (1976) ; Hughes and Wineman (2009) ; Lillard (2012) ; Lopata et al. (2005) ; McWilliams et al. (2014) ; Rhoades (2016) ; Rule and Barrera (2003) ; Soundy (2003) ; Souto-Manning and James (2008) ; Zhang et al. (2010)
Turkey	2	Aydoğan (2016) ; Buldur and Gokkus (2021)
Sweden	2	Magnusson (2021) ; Nilsson et al. (2018)
Canada	1	Kim and Darling (2012)
Finland	1	Suortti and Lipponen (2016)
France	1	Courtier et al. (2021)
India	1	Veeranna et al. (2011)
Italy	1	Beltchenko (2016)
Lebanon	1	Henningsen (2013)
Malaysia	1	Hendi and Asmawi (2018)
Mexico	1	Chavarría (2021)
Nigeria	1	Musa and Adeyinka (2021)
Puerto Rico	1	Bryan-Silva and Sanders-Smith (2021)
Switzerland	1	Elben and Nicholson (2017)
Spain	1	Pérez-Pérez et al. (2021)

additional studies have been carried out in Italian, as well as in other languages and countries where Reggio and Montessori approaches influence the pedagogy. As such, it is important to note that the results of this review, which was carried out in English, provides researchers with one viewpoint. Combining the results from this review with existing and future reviews carried out in languages other than English could provide a more comprehensive picture of the scope of studies that have been conducted on literacy in Reggio and Montessori contexts worldwide.

What other characteristics of the reviewed studies can inform future research?

Participants in the reviewed studies. Most of the reviewed studies included preschool-aged ($n = 19$) or elementary-aged children ($n = 5$). This age range makes sense given the focus on early literacy since preschool children usually fall within the three to six year range. Oral communication is well developed at this age setting a solid foundation for additional early literacy skills like phonological awareness, concepts about print, and alphabet knowledge. As such, is it not surprising that preschool-aged children

attending a Montessori or Reggio-inspired school were most often selected for the targeted study populations. In addition to children, teachers participated in ten of the reviewed studies by completing questionnaires and partaking in observations and interviews. Two studies asked parents to complete a questionnaire about their children's at-home literacy behaviors and one study included parents in their observational analysis (McWilliams et al., 2014). Three studies (Del Grande, 1976; Hendi and Asmawi, 2018; Veeranna et al., 2011) included teachers as the sole sample. All of the other studies that focused on preschool or elementary-aged children included measures for teachers and parents as secondary forms of data (see Table 7).

Key literacy skills. As Tables 8 and 9 show, the reviewed studies included a range of literacy skills. Phonological awareness and oral language were measured the most. This is not surprising given that these two skills should be foundational elements of any early literacy program. Additionally, Montessori places a strong emphasis on these skills, along with print awareness, letter-sound association, vocabulary, and writing (Feez, 2009).

Table 7. Participants in the reviewed studies.

Group of participants	n	Studies
Preschool-aged children (between 3-6 years)	19	Aydoğan (2016); Beltchenko (2016); Bryan-Silva and Sanders-Smith (2021); Buldur and Gokkus (2021); Chavarria (2021); Courtier et al. (2021); Henningsen (2013); Hughes and Wineman (2009); Kim and Darling (2012); Lillard, A. S. (2012); Magnusson (2021); McWilliams et al. (2014); Musa and Adeyinka (2021); Nilsson et al. (2018); Pérez-Pérez et al. (2021); Rhoades (2016); Soundy (2003); Suortti and Lipponen (2016); Zhang et al. (2010)
Elementary-aged children (grades 1-3)	5	Elben and Nicholson (2017); Lopata et al. (2005); Rule and Barrera (2003); Soundy (2003); Souto-Manning and James (2008)
Teachers	10	Beltchenko (2016); Bryan-Silva and Sanders-Smith (2021); Del Grande (1976); Hendi and Asmawi (2018); McWilliams et al. (2014); Nilsson (2018); Pérez-Pérez et al. (2021); Soundy (2003); Souto-Manning and James (2008); Veeranna et al. (2011)
Parents	3	Bryan-Silva and Sanders-Smith (2021); Elben and Nicholson (2017); McWilliams et al. (2014)

Table 8. Key literacy skills examined in the Reggio studies.

Literacy skill	n	Studies
Language (general)	4	Chavarría (2021) ; Kim and Darling (2012) ; McWilliams et al. (2014) ; Nilsson et al. (2018)
Early literacy skills (general)	2	Henningesen (2013) ; Souto-Manning and James (2008)
Decoding skills	1	Beltchenko (2016)
Listening comprehension	2	Souto-Manning and James (2008) ; Zhang et al. (2010)
Multimodal and multiliteracies	2	Magnusson (2021) ; Rhoades (2016)
Oral language	2	Beltchenko (2016) ; Magnusson (2021) ;
Writing	2	Hughes and Wineman (2009) ; Magnusson (2021)

Table 9. Key literacy skills examined in the Montessori studies.

Literacy skill	n	Studies
Language (general)	2	Aydoğan (2016) ; Chavarría (2021)
Early literacy skills (general)	1	Bryan-Silva and Sanders-Smith (2021)
Decoding skills	1	Courtier et al. (2021)
Letter-sound association	5	Elben and Nicholson (2017) ; Hendi and Asmawi (2018) ; Lillard (2012) ; Suortti and Lipponen (2016) ; Veeranna et al. (2011)
Listening comprehension	3	Lopata et al. (2005) ; Musa and Adeyinka (2021) ; (2010); Veeranna et al. (2011)
Oral language	4	Courtier et al. (2021) ; Hendi and Asmawi (2018) ; Soundy (2003) ; Veeranna et al. (2011)
Phonological awareness	7	Buldur and Gokkus (2021) ; Courtier et al. (2021) ; Elben and Nicholson (2017) ; Hendi and Asmawi (2018) ; Pérez-Pérez et al. (2021) ; Suortti and Lipponen (2016) ; Veeranna et al. (2011)
Print awareness	2	Buldur and Gokkus (2021) ; Hendi and Asmawi (2018)
Reading comprehension	3	Elben and Nicholson (2017) ; Lopata et al. (2005) ; Musa and Adeyinka (2021)
Reading interest/motivation	1	Del Grande (1976)
Spelling	1	Pérez-Pérez et al. (2021)
Vocabulary	6	Aydoğan (2016) ; Lillard (2012) ; Pérez-Pérez et al. (2021) ; Rule and Barrera (2003) ; Suortti and Lipponen (2016) ; Veeranna et al. (2011)
Writing	2	Lopata et al. (2005) ; Musa and Adeyinka (2021)

Measures used in the reviewed studies. Vocabulary, letter-sound associations, and phonological awareness were measured the most in the reviewed studies. While [Buldur and Gokkus \(2021\)](#) did not explicitly state which sub-tasks they used from the SEELS test, it can also be assumed that phonological awareness was one of the tasks since phonological awareness was a focus in their study. Some of the measures listed in [Table 10](#) have been well used by researchers examining early literacy skills (e.g., PPVT). At the same time, there a few of the measures (e.g., German PA test) that were specific to a language other than English, and thus, would be less commonly used by researchers in English-speaking contexts. All of the studies listed in [Table 10](#) also used more than one measure, which can contribute to the study's reliability and also hone in on specific literacy skills.

General discussion

The main goal of this scoping review was to shed light on research that has examined literacy in Reggio and Montessori settings. Based on the reviewed studies, a secondary aim was to identify themes that exist within and across these two well-established early childhood approaches. Five research questions helped discern information about the main themes related to the reviewed studies, the patterns across the two contexts, methods that have been used to document literacy in Reggio and Montessori settings, how geographical contexts compare, and additional characteristics that can inform future research. This section begins with a discussion of the themes that resulted from the review. A discussion of the patterns across the two contexts follows. Key implications for future research are then discussed.

A discussion of the themes in relation to the Reggio Emilia studies

Literacy learning through inquiry, play, and the arts was a focus in four of the reviewed studies, all of which examined literacy in a Reggio-inspired classroom ([Henningsen, 2013](#); [Magnusson, 2021](#); [Nilsson et al., 2018](#); [Souto-Manning and James, 2008](#)). These *avenues for literacy learning* (theme 1) allowed the children in each of the studies to develop their early literacy skills through purposefully integrated learning experiences. For example, [Henningsen \(2013\)](#) documented four examples of children's literacy learning while they engaged in inquiry projects. Elements of literacy, including oral language development and writing were occurring in a natural authentic way. The authors concluded that inquiry activities, a main component of any Reggio-inspired classroom, provided children with opportunities to practice their literacy skills within a meaningful context.

Table 10. Measures used in the reviewed studies.

Literacy skill	n	Measure	Studies
Early literacy (general)	1	Scale for evaluating early literacy skills (SEELS)	Buldur and Gokkus (2021)
Language arts (general)	2	Language skills achievement test (LSAT)	Musa and Adeyinka (2021)
		New York state English language exam	Lopata et al. (2005)
Letter-sound association	3	Alphabet recognition test	Elben and Nicholson (2017) ; Suortti and Lipponen (2016)
		Woodcock-johnson III	Lillard (2012)
Oral language	1	Evaluation du langage oral (khomsi, 2001)	Courtier et al. (2021)
Phonological awareness	3	PA test	Courtier et al. (2021)
		German PA test	Elben and Nicholson (2017)
		Phonemic awareness test	Courtier et al. (2021) ; Suortti and Lipponen (2016)
Reading comprehension	1	German reading comprehension test	Elben and Nicholson (2017)
Vocabulary	5	Descoeudres vocabulary test (DVT)	Aydoğan (2016)
		Peabody picture vocabulary test (PPVT)	Aydoğan (2016) ; Lillard (2012)
		General vocabulary test	Rule and Barrera (2003) ; Suortti and Lipponen (2016)

Similarly, [Nilsson et al. \(2018\)](#) used a play-as-learning framework to illustrate how play, exploration, and children's self-initiated activities can act as a vehicle for literacy development, particularly oral language development. Rather than thinking about play and literacy learning as separate constructs, the authors considered a more holistic approach by suggesting that play-as-learning can lead to meaning-making processes and growth in language and literacy development. This finding coincides with what research has found in more traditional early childhood settings ([Pyle et al., 2018](#); [Rand and Morrow, 2021](#)). Pyle and her colleagues, for instance, examined the enacted integration

of literacy learning and play-based pedagogies and found that children's play integrated literacy when their teachers held the belief that play could act as a vehicle for children's literacy learning (2018). [Souto-Manning and James \(2008\)](#) had similar findings and proposed that teaching children literacy through the arts set a foundation for meaningful learning. Their ethnographic observational study led to a deeper understanding of how the arts can support literacy teaching and learning. Findings showed how a multi-arts approach can develop greater literacy skills and the retention of more knowledge. This was also the case in [Magnusson's \(2021\)](#) study. Through a sociocultural lens, [Magnusson \(2021\)](#) demonstrated how literacy events and practices, such as oral communication and writing, were enriched through the use of visual arts and digital technology. These last two studies are in line with research promoting multimodalities and digital literacy as essential components of any early childhood program in the 21st century ([Deklerk, 2020](#); [The New London Group, 1996](#)).

Another main goal of any Reggio-inspired classroom is that the teachers create *enriched literacy environments* (theme 4) with materials and props that can contribute to children's literacy learning as well as opportunities for rich and purposeful dialogue. One of the reviewed studies ([Beltchenko, 2016](#)) specifically examined the role of the environment in fostering language and literacy development in Reggio classrooms. [Beltchenko \(2016\)](#) showed how picture books can contribute to a language-rich environment and foster narrative skills, listening comprehension, and vocabulary development. One of the main philosophies of the Reggio approach is that the learning environment acts as a third teacher and should provide children with spaces and materials to promote literacy learning and foster various opportunities for children to communicate their ideas. The stories along with their illustrations led the children in Beltchenko's study (2016) to communicate their thinking about the elements of the stories and build onto their "curiosities and wonderings" (150).

Taken together, the reviewed Reggio studies examined oral language and related language-based skills, including listening comprehension, as integral to a Reggio-inspired environment. This makes sense given Reggio Emilia's emphasis on play, inquiry, and the arts and the integration of literacy skills into classroom activities ([Gandini, 2012](#); [Malaguzzi, 2012](#)). The Reggio studies in this review also shared findings related to writing and composition skills. These skills were observed in more naturally occurring ways, again integrated into larger arts and inquiry projects.

A discussion of the themes in relation to the Montessori studies

Similar to a Reggio classroom, literacy in a Montessori classroom is rooted in a language-rich environment. Two of the Montessori studies examined how a Montessori environment can become an *enriched literacy environment* (theme 4) through the materials used in the classroom. Montessori teacher guides are clear in which materials are used and when they should be introduced, usually prompted by the child's interest and self-directedness (Feez, 2009). In Pérez-Pérez et al.'s study (2021), for instance, matching sound cards were used with 81 children with a communication disorder. The authors found that the use of these Montessori materials evoked changes in alphabet knowledge across 12 sessions. Additionally, Soundy (2003) looked at how the Montessori environment as a whole provides an *enriched literacy environment* "where children from infancy through kindergarten came to understand the important relationship between thought and literacy learnings" (127). A qualitative investigation in which descriptions of the children's experiences were documented led to illustrations of the literacy events occurring in the classroom. For instance, Soundy (2003) described several literacy-rich spaces in the kindergarten classroom including the library corner, small tables with coloured pencils and drawing material, teacher-directed space where individual reading lessons occurred, and the dramatic play corner where children were narrating stories. All of these areas were purposefully constructed by the teachers to ensure language and literacy learning, a hallmark of any Montessori program.

Most of the reviewed studies that examined literacy in a Montessori setting showed an *early literacy advantage* (theme 3) by investigating how children's phonological and phonemic awareness as well as alphabet knowledge developed over time. These studies align with research that has deemed phonological and phonemic awareness as essential components of any early childhood literacy program (Lonigan and Shanahan, 2009; Snow, 2017). For instance, Elben and Nicholson (2017) found that when compared with local children in a state school, children in a Montessori school had an advantage over the local children in alphabet knowledge at entry to grade one. This advantage, however, was short lived and did not translate to a significant advantage at the end of grade one. Additionally, although the authors recognized that socioeconomic status (SES) may have impacted their findings, they did not control for SES. This is indeed a study limitation and could have skewed the results since learning was compared across two different schools. Lillard (2012) found a similar early advantage: when compared with children in a conventional program, preschool children in both a classic Montessori and supplemented Montessori classroom

showed significantly greater gains in reading and vocabulary. Additionally, [Suortti and Lipponen \(2016\)](#) found that children in a preschool Montessori classroom improved their performance in phonological tasks over a six-month period.

While these studies suggest at least an early advantage of learning in a Montessori setting, results differed in terms of the lasting effect of this early advantage. One possible reason for the differences in results could be the age of the children involved in the studies. [Elben and Nicholson \(2017\)](#) tested second grade children over the course of one year, whereas [Lillard \(2012\)](#) and [Suortti and Lipponen \(2016\)](#) tested preschool children. Perhaps the age of the children as well as the time between the pre and post-test scores are influential factors.

A community connection across the school and children's homes was something that Maria Montessori emphasized in her writings ([Montessori, 2013](#)). This home-school connection (theme 2) was apparent in one of the reviewed Montessori studies. [Bryan-Silva and Sanders-Smith \(2021\)](#) showed how "teachers and families use the Montessori Method as an avenue for developing a culturally sustaining literacy program that supports a pedagogy for liberation" (4). As the authors discuss, Freire's pedagogy for liberation recognizes human beings as active agents who can transform their social, financial, and political world ([Freire, 2010](#)). The parents and families in [Bryan-Silva and Sanders-Smith's \(2021\)](#) study used guides developed by the schools to help engage their children in literacy events that allowed them to "read the surrounding world through lived experiences" (14). Through compatible reading and writing activities at home and in the Montessori classroom, the children developed language and literacy skills most relevant to their everyday world. Aligning with Montessori's philosophy of the importance of community in supporting a child's development, [Bryan-Silva and Sanders-Smith \(2021\)](#) showed how a program that fosters a home-school connection promotes enriched literacy learning.

Taken together, the reviewed Montessori studies examined a range of literacy skills (as outlined in [Table 9](#) above). These skills, including oral language, phonological awareness, and letter-sound knowledge, to name a few, were documented through a range of assessment measures and data sources. Skills related to vocabulary development were also explicitly mentioned as being included in a literacy-rich environment.

As a results of this review, we can recognize the differences between Reggio and Montessori contexts; each have clear and distinct philosophies and materials, and each emphasizes particular approaches to early literacy. As most of the Reggio studies reviewed in this article unveil, literacy in a Reggio-inspired

classroom is often integrated into play, art, and inquiry projects rather than taught as a separate subject. The majority of the Montessori studies reviewed in this article examined literacy skills resulting from more direct and explicit instruction, where the children focus on using specific materials to recognize sounds, letters, and decode and encode words. While there are clear distinctions between the two early years approaches, the results of the review also garnered two main patterns across the two contexts.

Patterns across the two contexts

A key pattern in relation to early literacy across Reggio and Montessori contexts is the goal of providing children with language-rich environments and fostering oral language development. Several of the reviewed studies provided detailed descriptions of how the learning space and materials provided numerous opportunities for talk, vocabulary development, rhyming and phonological awareness development, and alphabet knowledge; the spaces acted as a “third teacher” (Beltchenko, 2016; Hendi and Asmawi, 2018; Musa and Adeyinka, 2021; Pérez-Pérez et al., 2021; Soundy, 2003). In both contexts, the environment and the teacher facilitate early literacy development, often following the lead of the child and their interests. The materials are presented in such a way as to provoke language, learning new words, identifying print concepts, and learning letter names and sounds, and provide children with opportunities to become self-directed learners.

Since the reviewed studies that examined the environment did so across a relatively short time period, it is important for interested researchers to explore the direct impact of environments and materials in Reggio and Montessori classrooms on children’s literacy development using a range of methods, including longitudinal and quantitative methods. Case studies focused on particular literacy elements over time would also provide valuable insight. Of particular interest might even be the subtle ways in which teachers interact with the environments to promote early literacy.

A second pattern across the two contexts relates to writing as a tool of communication. Writing is emphasized in both Reggio and Montessori classrooms: in a Reggio classroom writing is one of the tools for the children to communicate their ideas and provocations and the children’s interests lead the way in their learning of how to write. Writing is part of a child’s multimodal learning and writing provocations help children to develop their early writing skills (Magnusson, 2021). Montessori programs also see writing as an essential form of communication. Taking a more systematic approach to writing words

(Lillard, 1996), letters and their corresponding sounds are introduced to the child in a particular order. Additionally, children often work one-on-one with a teacher as they practice their printing skills until a certain level of mastery is reached (Lillard, 1996).

Based on the reviewed studies, it is clear that literacy, and in particular oral language and writing are viewed as key program components in both Reggio and Montessori contexts. As prior research on early literacy has shown, both language-related and print-related skills should be included in every early childhood literacy program, regardless of the approach (Snow, 2017; Teale et al., 2010). When research, such as the reviewed studies, documents early literacy development and highlights how children acquire language and literacy skills in the early years, we gain a more comprehensive picture of what is happening and what is working across geographic and programmatic contexts. Findings can be leveraged for future research and practice to ensure that children are making gains in their literacy development, regardless of the approach.

Key implications for research

Based on this scoping review, three implications for research are offered. First, the methods used by researchers in each context supported specific research objectives and examined the development of skills over time as well as documented descriptive details about various literacy events that occurred in the classrooms. While the studies used particular methods that were suitable to their research questions, future research should consider the benefits of employing both qualitative and quantitative methods to examine literacy in both Reggio and Montessori classrooms. It is recognized that this review was limited to English articles, however, we can still discern some information about the methods used in studies examining literacy in Reggio and Montessori contexts. As the results showed, qualitative approaches were mostly used in the Reggio studies, with one study following a single-subject case design (Zhang et al., 2010). Qualitative methods have the advantage of exploring lived experiences and providing in-depth descriptions of events. However, it could be worthwhile for research to examine specific reading and literacy-related skills in Reggio contexts using experimental designs, as was seen with most of the studies examining literacy in Montessori settings. Researchers could employ quantitative methods to analyze larger datasets within Reggio-inspired contexts. Results could contribute to insights into broader trends and patterns related to play and the arts as vehicles for literacy learning. The list of measures used for

the quantitative studies could act as a starting point for researchers interested in examining the development of literacy skills in Reggio classrooms.

A second research implication relates to the geographical contexts of the reviewed studies. The reviewed studies occurred in 15 different countries, however, it is critically important for researchers to conduct studies in the countries where Reggio and Montessori schools are currently located. It is possible that studies have been carried out in languages other than English, however, there are over 34 countries that offer Reggio schools ([North American Reggio Emilia Alliance, 2022](#)) and 96 countries worldwide that offer Montessori schools ([Association Montessori Internationale, 2022](#)). Examining Reggio and Montessori approaches across geographical and cultural contexts can provide researchers and educators with a greater understanding of how the philosophies, materials, environments, and instructional methods differ, even if these differences are subtle. Each country is unique and while there are general guidelines and philosophies for Reggio and Montessori approaches, the subtle differences can highlight the effectiveness of these two approaches across diverse settings and how the approaches can adapt to different cultural contexts and languages.

A third implication for research relates to participants. Unsurprisingly, the majority of participants in the reviewed studies were children. It is indeed essential to include children as the main sample for understanding the effects of literacy experiences and events, however, more studies could be conducted examining parent and teacher perceptions. Bringing parent and teacher voices into the conversation can provide different viewpoints and a broader picture of each approach. Parent and teacher perceptions can tell us about their background knowledge and understanding of literacy skills which could provide more insight into the home-school connections.

Conclusion

This scoping review highlights the need for more empirical studies to examine literacy in Reggio and Montessori classrooms, across geographical contexts and using a variety of research methods. Research is clear on the skills that should be included in all early literacy programs, however, the effects of these skills and how they are embedded within non-traditional approaches, like Reggio and Montessori requires further examination. A comprehensive picture of the research that has been conducted on literacy in these two contexts can lead to a broader understanding of the benefits of learning in Reggio-inspired and Montessori classrooms, as well as any suggestions for improvement.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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References

- Arksey H and O'Malley L (2005) Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology* 8(1): 19–32.
- Association Montessori Internationale (2022). Find your country. <https://montessori-ami.org/countries>
- Aydoğan Y (2016) Examination of the effect of Montessori education on language development of pre-school children. *Academic Research International* 7(5): 112–119.
- Baillet LL, Repper K, Murphy S, et al. (2013) Emergent literacy intervention for pre-kindergarteners at risk for reading failure: Years 2 and 3 of a multiyear study. *Journal of Learning Disabilities* 46(2): 133–153.
- Beltchenko L (2016) Intellectual pursuits of young children through picture book literacy, focusing on Italian preschools. *Gifted Child Today* 39(3): 145–153.
- Braun V and Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2): 77–101.
- Bryan-Silva K and Sanders-Smith SC (2021) H is for Hurricane, M is for Maria: Supporting literacy in Vieques. *Journal of Early Childhood Literacy*. Online ahead of print. DOI: [10.1177/14687984211044196](https://doi.org/10.1177/14687984211044196)
- Buldur A and Gokkus İ (2021) The effect of Montessori education on the development of phonological awareness and print awareness. *Research in Pedagogy* 11(1): 264–277.
- Chavarría R (2021) Second language corner for children's house: A practitioner–researcher journey into bilingualism in Montessori education. *Journal of Montessori Research* 7(1): 67–82.
- Courtier P, Gardes ML, Van der Henst JB, et al. (2021) Effects of Montessori education on the academic, cognitive, and social development of disadvantaged preschoolers: A randomized controlled study in the French public-school system. *Child Development* 92(5): 2069–2088.
- Del Grande V (1976) The teaching of reading and Montessori education. *The Teacher Educator* 12(2): 19–22.
- Deklerk K (2020) Multimodality in early childhood education. *International Journal of Literacy, Culture, and Language Education* 1: 73–87.

- Elben J and Nicholson T (2017) Does learning the alphabet in kindergarten give children a head start in the first year of school? A comparison of children's reading progress in two first grade classes in state and Montessori schools in Switzerland. *Australian Journal of Learning Difficulties* 22(2): 95–108.
- Feez S (2009) *Montessori and Early Childhood: A Guide for Students*. Sage.
- Freire P (2010) *Pedagogy of the Oppressed*. Continuum.
- Gandini L (2012) History, ideas, and basic principles: An interview with Loris Malaguzzi. In: Edwards C, Gandini L and Forman G (eds), *The Hundred Languages of Childrens: The Reggio Emilia Experience in Transformation*. ABC-CLIO, pp. 27–71.
- Gough P and Tunmer E (1986) Decoding, reading, and reading disability. *Remedial and Special Education* 7(1): 6–10.
- Hendi N and Asmawi A (2018) Preschool English teachers' practices and early literacy instruction: Montessori vs. International Preschool Curriculum. *Malaysian Online Journal of Educational Sciences* 6(2): 29–36.
- Henningsen M (2013) Making sense of experience in preschool: Children's encounters with numeracy and literacy through inquiry. *South African Journal of Childhood Education* 3(2): 41–55.
- Hughes E and Wineman K (2009) Learning language: Listening and writing with diverse young children. *Dimensions of Early Childhood* 37(2): 3–9.
- İnan HZ (2021) Understanding the Reggio Emilia-inspired literacy education: A meta-ethnographic study: Reggio Emilia-inspired literacy education. *International Journal of Curriculum and Instruction* 13(1): 68–92.
- Kim B and Darling L (2012) Shades of pink: Preschoolers make meaning in a Reggio-inspired classroom. *Young Children* 67(2): 44–50.
- Lerner MD and Lonigan CJ (2016) Bidirectional relations between phonological awareness and letter knowledge in preschool revisited: A growth curve analysis of the relation between two code-related skills. *Journal of Experimental Child Psychology* 144: 166–183.
- Lillard P (1996) *Montessori Today: A Comprehensive Approach to Education from Birth to Adulthood*. Schocken Books.
- Lillard AS (2012) Preschool children's development in classic Montessori, supplemented Montessori, and conventional programs. *Journal of School Psychology* 50(3): 379–401.
- Logaridis L, Tranter K and Siegrist L (2012) Make it meaningful! Emergent literacy in the kindergarten years. In: *The Early Childhood Educator*. https://playfullyinspired.com/files.wordpress.com/2014/03/ecebc_summer2012_make_it_meaningful.pdf
- Lonigan CJ and Shanahan T (2009) Developing Early Literacy: Report of the national early literacy panel. In Executive Summary. *A Scientific Synthesis of Early Literacy Development and Implications for Intervention*. National Institute for Literacy. <https://files.eric.ed.gov/fulltext/ED508381.pdf>

- Lopata C, Wallace NV and Finn KV (2005) Comparison of academic achievement between Montessori and traditional education programs. *Journal of Research in Early Childhood Education* 20(1): 5–13.
- Magnusson LO (2021) ‘Look, my name! I can write’—Literacy events and digital technology in the preschool atelier. *Journal of Early Childhood Literacy*. Online ahead of print. DOI: [10.1177/14687984211058943](https://doi.org/10.1177/14687984211058943)
- Malaguzzi L (2012) No way. The hundred is there. In: Edwards C, Gandini L and Forman G (eds), *The Hundred Languages of Children: The Reggio Emilia Experience in Transformation*. ABC-CLIO, p. 3.
- McWilliams M, Vaughns A, O’Hara A, et al. (2014) Art play: Stories of engaging families, inspiring learning, and exploring emotions. *Young Children* 69(2): 32–39.
- Montessori M (2013) *The Montessori Method*. Transaction Publishers.
- Musa R and Adeyinka A (2021) School environment and methods of teaching as correlates of language skills achievement of pre–primary school pupils in Edo State Nigeria. *Education Quarterly Review* 4(3): 243–251.
- North American Reggio Emilia Alliance (2022). International Network. <https://www.reggioalliance.org/international-network/>
- Nilsson M, Ferholt B and Lecusay R (2018) ‘The playing-exploring child’: Reconceptualizing the relationship between play and learning in early childhood education. *Contemporary Issues in Early Childhood* 19(3): 231–245.
- Pérez-Pérez JR, Cabiellles-Hernández D, Sánchez-Santillán M, et al. (2021) Interaction of children with and without communication disorders using Montessori activities for the tablet. *Personal and Ubiquitous Computing* 25(3): 495–507.
- Piaget J (1972) *The Psychology of the Child*. Basic Books.
- Piasta SB, Purpura DJ and Wagner RK (2010) Fostering alphabet knowledge development: A comparison of two instructional approaches. *Reading and Writing* 23(6): 607–626.
- Pyle A, Priolella A and Poliszczuk D (2018) The play-literacy interface in full-day kindergarten classrooms. *Early Childhood Education Journal* 46: 117–127.
- Rand M and Morrow L (2021) The contribution of play experiences in early literacy: Expanding the science of reading. *Reading Research Quarterly* 56: S239–S248.
- Rhoades M (2016) Little pig, little pig, yet me come in!” Animating the three little pigs with preschoolers. *Early Childhood Education Journal* 44: 595–603.
- Rubizzi L and Bonilauri S (2012) From messages to writing: Experiences in literacy. In: Edwards C, Gandini L and Forman G (eds), *The Hundred Languages of Children: The Reggio Emilia Experience in Transformation*. ABC-CLIO, pp. 213–231.
- Rule A and Barrera M (2003) Using objects to teach vocabulary words with multiple meanings. *Montessori Life* 15(3): 14–17.
- Schuele CM, Justice LM, Cabell SQ, et al. (2008) Field-based evaluation of two-tiered instruction for enhancing kindergarten phonological awareness. *Early Education and Development* 19(5): 726–752.
- Snow CE (2017) *Early Literacy Development and Instruction: An Overview*. The Routledge International Handbook of Early Literacy Education, pp. 5–13.

- Sparks RL, Patton J and Murdoch A (2014) Early reading success and its relationship to reading achievement and reading volume: Replication of '10 years later. *Reading and Writing* 27(1): 189–211.
- Soundy CS (2003) Portraits of exemplary Montessori practice for all literacy teachers. *Early Childhood Education Journal* 31(2): 127–131.
- Souto-Manning M and James N (2008) A multi-arts approach to early literacy and learning. *Journal of Research in Childhood Education* 23(1): 82–95.
- Stanley C T, Petscher Y and Catts H (2018) A longitudinal investigation of direct and indirect links between reading skills in kindergarten and reading comprehension in tenth grade. *Reading and Writing* 31(1): 133–153.
- Suortti O and Lipponen L (2016) Phonological awareness and emerging reading skills of two-to five-year-old children. *Early Child Development and Care* 186(11): 1703–1721.
- Teale W, Hoffman J and Paciga K (2010) Where is NELP leading preschool literacy instruction? Potential positives and pitfalls. *Educational Researcher* 39(4): 311–315.
- The New London Group (1996) A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review* 66(1): 60–93.
- Veeranna K, Rajalakshmi M and Suresh K (2011) Approaches adopted by preschools to foster literary skills among preschoolers. *Language in India* 11(10): 150–170.
- Wohlwend K (2015) One screen, many fingers: Young children's collaborative literacy play with digital puppetry apps and touchscreen technologies. *Theory Into Practice* 54(2): 154–162.
- Zhang J, Fallon M and Kim E J (2010) The Reggio Emilia curricular approach for enhancing play development of young children. *Curriculum and Teaching Dialogue* 12(1/2): 85–99.