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Investigating the relationship between parental attitudes toward reading, early literacy activities, and reading literacy in Arabic among Emirati children

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Abstract

Emirati children's reading skills have consistently lagged behind global standards on international standardized tests. Given the United Arab Emirates's Vision 2031, which aims for a world-class education system, and given the importance of Arabic literacy in preserving national identity and cultural heritage, there is an urgent need to investigate the factors that influence Arabic literacy among Emirati children. Therefore, this study, using data from the Progress in International Reading Literacy Study (PIRLS) 2016 database, aimed to examine the relationships between parents' attitudes toward reading, early literacy activities, early literacy tasks, and Arabic literacy. Specifically, the study aimed to (1) determine the predictive value of parental attitudes toward reading for Arabic reading literacy among Emirati children; (2) examine how early literacy activities and tasks contribute to Arabic reading literacy; and (3) examine the mediating role of early literacy activities and tasks in the relationship between parental attitudes and Arabic reading literacy. The results of the study suggest that parental attitudes toward reading are an important predictor of their children's Arabic reading literacy. Participation in early literacy activities before primary school and mastery of early literacy tasks at the beginning of primary school were both associated with reading proficiency in Arabic. Furthermore, both early literacy activities and early literacy tasks significantly mediated the relationship between parental attitudes toward reading and children's reading proficiency in Arabic. The findings are critical for educators to adapt teaching methods, curricula, and parental involvement programs to more effectively support Arabic literacy development. The study highlights the need for an inclusive approach involving parents, educators, and policymakers to create an enabling environment for the development of Arabic literacy, which is essential for academic success and cultural preservation.

Keywords Arabic reading literacy, Early literacy activities and tasks, Parental attitudes toward reading, PIRLS, United Arab Emirates

Literacy is the cornerstone of academic achievement and an important foundation for lifelong learning, as underscored by numerous studies across the education research landscape (Kirsch & Lennon, 2017; OECD, 2010). In addition to facilitating access to knowledge, literacy provides a variety of cognitive and social benefits that enrich comprehension, critical thinking, and interpersonal skills critical to effective socialization (Kilpatrick, 2015; Castles et al., 2018). Therefore, it is not only desirable to decipher the factors that influence children's literacy development, but also essential to develop a comprehensive understanding of educational dynamics. Parental attitudes toward reading and early literacy activities have been shown to be critical antecedents of children's literacy skills in a variety of contexts (Niklas & Schneider, 2017; Sénéchal & LeFevre, 2002; Yeo et al., 2014). The wealth of empirical evidence underscores the profound influence of parental attitudes and behaviors on children's reading habits and skills (Hamilton et al., 2016; Niklas & Schneider, 2013). Moreover, early childhood reading activities, such as reading aloud, storytelling, and language-enriched interactions, have been documented as effective tools for promoting basic reading skills (Justice & Ezell, 2002; Mol et al., 2008; Wasik & Hindman, 2011).

Yet, despite these established research findings, there remains a conspicuous gap in our knowledge of how these factors interact to influence Emirati children's reading skills, particularly in the area of Arabic. This gap is even more critical given the unique challenges posed by the particular morphological, phonological, and syntactic features of Arabic (Saiegh-Haddad, 2017; Saiegh-Haddad & Geva, 2008; Saiegh-Haddad et al., 2011). The Arabic language has special linguistic features that distinguish it from many other languages. Morphologically, Arabic is based on a root and pattern system that forms the core of word formation. Phonologically, it contains unique sounds not found in other languages, and short vowels are often omitted in the written form. Syntactically, Arabic exhibits patterns such as the placement of the verb before the subject, which contrasts with structures in languages such as English (Saiegh-Haddad, 2017; Saiegh-Haddad & Geva, 2008; Saiegh-Haddad et al., 2011). These features can complicate the learning and teaching of Arabic, especially in the areas of reading and writing development. Such subtleties should be considered when evaluating external factors that influence Arabic literacy.

Given this linguistic complexity inherent in Arabic, it is important to examine the broader educational landscape of the United Arab Emirates (UAE). The UAE has made significant efforts to increase literacy rates and create an impressive educational infrastructure, as evidenced by its far-reaching and visionary strategic plans, Vision 2021 and Vision 2031. These national strategies illustrate the country's commitment to cultivating an education system that can rival the world's leading institutions of learning (UAE Government, 2014, 2023). However, despite the laudable aspirations expressed in these strategic frameworks, empirical evidence suggests that the realization of these goals has not yet been fully achieved. One prominent indicator of concern is the lackluster performance of Emirati students on international reading assessments, which highlights the disconnect between national ambitions and the current state of reading literacy in the country (Mullis et al., 2017). At a time when literacy is the foundation of the knowledge economy, it is of utmost importance to explore and understand the multiple factors that influence children's literacy development, especially in the context of the

Arabic language, which has cultural and historical significance in the UAE. It is widely recognized that the acquisition of literacy skills in the early stages of development has far-reaching effects on an individual's cognitive development, educational success, and subsequent life trajectory (Heckman, 2006; National Early Literacy Panel, 2008; Ritchie & Bates, 2013). Thus, the present study seeks to contribute to the growing literature by examining the complex interplay between parental attitudes toward reading, early literacy activities, and literacy achievement among Emirati children in Arabic. Through the use of rigorous methods and analysis, this study aims to provide nuanced insights into the dynamics of literacy development in the Emirati context. These findings are not only important to the academic community, but also of critical value to policymakers and stakeholders involved in shaping the educational landscape in the UAE. Furthermore, by situating the findings within the broader context of the UAE's national education goals, this study has the potential to provide information for the development and refinement of evidence-based policies and strategies that can effectively address the challenges and optimize the opportunities associated with promoting Arabic literacy. Consequently, this can help support the UAE's vision of creating an education system that both reflects its cultural heritage and is competitive on an international level.

Relationship between parental attitudes toward reading and children's reading literacy

The theoretical and empirical exploration of attitudinal factors and their influence on perception and behavior is an important area of research within psychology (Eysenck, 2004; Schwarz, 2007). As postulated in Vygotsky's sociocultural theory, knowledge and attitudes result primarily from the interaction between individuals and their social environment, which consequently shapes their behavioral repertoire (Vygotsky, 1978). Bandura's social cognitive theory complements this perspective by emphasizing the fundamental role of attitudes in determining behavior, noting that attitudes are learned primarily through observational processes and social modeling (Bandura, 1986). Viewing this through the lens of the family context, it is apparent that attitudes transmitted by parents have a major impact on children's attitudes and behaviors in various areas of life, particularly reading. Empirical studies have consistently shown that parental reading habits profoundly shape their children's reading skills and drive their intellectual growth and overall success in this area. Research shows that parents with strong reading skills who serve as constructive reading role models are more likely to raise children who excel in reading (Yeo et al., 2014, Sénéchal & LeFevre, 2002). These parents, who are actively engaged in reading, pass on their experiences to their children, provide them with the necessary literacy resources, and thus foster a conducive learning environment. This environment fosters positive attitudes toward learning, brings out parental expectations, and increases children's intellectual acuity, underscoring the role of parents as important influencers in their children's literacy development (Weigel et al., 2006, Sénéchal et al., 2008).

Furthermore, a home environment that promotes a vibrant reading culture is positively related to children's reading habits. Parental involvement in reading activities with their children, such as reading aloud and fostering positive attitudes toward reading, has been consistently associated with improved reading skills, higher reading achievement, and the instilling of a lifelong passion for reading (Jiménez et al., 2006, Sénéchal &

LeFevre, 2002). Early exposure to reading can expand vocabulary, cultivate reading comprehension, and instill a passion for reading, all of which contribute to better academic performance over time (Bus et al., 1995; Mol & Bus, 2011). To support this, Sénéchal and LeFevre (2002) found in a five-year longitudinal study that parental involvement in reading activities with children was associated with improvements in first grade reading skills, including word recognition, reading comprehension, and spelling. When parents model positive attitudes toward reading, children are more likely to perceive reading as an enjoyable and valuable activity, a factor that may promote further literacy development (Sénéchal & LeFevre, 2002). In line with this, Van Steensel (2006) found a positive relationship between reading aloud as a family activity and the improvement of children's reading skills. These findings open new dimensions for understanding the role of parental reading attitudes in the development of children's literacy skills. Finally, empirical studies indicate a positive relationship between parental enthusiasm for reading aloud and the frequency of such activities at home (Dickinson & Tabors, 2001). Niklas et al. (2020) also suggest that parents who value the importance of reading are more likely to engage their children in a range of reading-related activities such as reading, telling, and discussing stories. Children who engage in these activities often develop foundational reading skills, including vocabulary acquisition, writing awareness, and reading comprehension (Adams, 1994), which are central to later reading success. Early acquisition of these skills is therefore an advantage for children as they learn to read throughout their development.

Relationship between parental attitudes toward reading and early literacy activities and tasks

The relationship between parental attitudes toward reading and involvement in early literacy activities is an important focus of scholarly discourse, affecting both the frequency and nature of home language and literacy practices with their children. As numerous studies have documented (e.g., Niklas & Schneider, 2013; Weigel et al., 2006), the term "early literacy activities" is used to describe targeted parental initiatives aimed at improving their child's reading and language skills. These activities include interactive reading time, frequent library visits, providing books, and participating in literacy activities such as storytelling, rhymes, illustrations, and literacy games (Demir-Lira et al., 2019; Weigel et al., 2006). Prior studies have emphasized the importance of early literacy activities such as oral storytelling, participation in discussions, and reading books aloud as contributing significantly to a child's reading development (Frijters et al., 2000; Mol et al., 2008; Whitehurst & Lonigan, 1998). Complementary research supports this assertion, indicating that these activities promote children's familiarity with writing, increase vocabulary, and improve reading comprehension (Neumann et al., 2013; Mol & Bus, 2011). In addition, parents who show a preference for frequent reading with their children tend to have positive attitudes toward reading and attach great importance to it (Mol & Bus, 2011). Manolitsis et al. (2013) support this argument by demonstrating that the frequency and quality of early reading activities conducted at home are positively correlated with parental attitudes toward reading. Parents with positive attitudes toward reading are more likely to participate in such activities with their children (Yarosz & Barnett, 2001), underscoring the central role of parents in promoting their children's reading skills.

Parents' pro-reading attitudes combined with active participation in pro-reading activities create an atmosphere of passion for reading and learning. Such an environment fosters children's interest in reading and learning and thus has a positive impact on their literacy skills and academic achievement (Demir-Lira et al., 2019; Niklas & Schneider, 2013; Weigel et al., 2006). Children who are instilled with a parental appreciation for reading from an early age are also more likely to have access to a wide variety of reading materials, ranging from books to magazines to newspapers (Kim & Quinn, 2013). Growing up in an environment that values and encourages reading increases the likelihood of having access to a wide range of reading materials. Numerous studies show that children who have access to a wide range of books tend to have better literacy skills, reading skill development, reading comprehension, and cognitive growth (Bus et al., 1995; Evans et al., 2010; Mol & Bus, 2011; Neuman & Celano, 2012; Sénéchal & LeFevre, 2002). Further, children who have access to a diverse book collection tend to achieve better academic performance in reading, mathematics, and science and show a propensity for leisure reading (Evans et al., 2010). These research findings suggest that parents who value reading and have positive attitudes toward it are more likely to engage their children in reading-related activities, the duration and quality of which can have a significant impact on children's literacy development.

Relationship between early literacy activities and tasks and children's reading literacy

The importance of early childhood literacy activities such as dialogic book reading between parents and children, storytelling, and language-intensive interactions for the development of children's literacy and listening skills is well documented in scientific research. These activities provide an optimal environment for cultivating the foundational skills essential for reading success, including print awareness, language fluency, and vocabulary enhancement (Mol et al., 2008; Wasik & Hindman, 2011). Reading aloud, for example, is recognized as an effective parental strategy for promoting children's language and literacy development (Zucker et al., 2013). Empirical evidence from Mol et al. (2008) supports this claim by demonstrating that such an approach stimulates the early stages of a child's literary skill development. Similarly, a study by Hargrave and Sénéchal (2000) provides compelling evidence that children's reading comprehension improves significantly when parents engage them in reading, inquiry, and discussion about the narrative. Moreover, in this context, parents serve as important role models who introduce their children to linguistic diversity, thus promoting the formation of personal relationships related to narratives (Farrant & Zubrick, 2013). The work of Sénéchal (2012) underscores the importance of reading aloud, emphasizing how it familiarizes young children with left-to-right reading, letter recognition, and word boundaries. Storytelling, another important early literacy practice, is of great benefit to children. A wealth of scientific evidence shows that parental storytelling not only promotes children's active listening and comprehension but also supports the creation of their own stories (Bus et al., 1995; Isbell et al., 2004). Reading aloud and storytelling together promote reading comprehension and mastery of other relevant reading skills (Hutton et al., 2015). Thus, children exposed to such activities develop an enhanced ability to resonate with stories and recognize their structures, important components of competent reading (Niklas & Schneider, 2015; Dunst et al., 2012).

Given the fundamental role of reading in child development, language-intensive parental interactions are critical to the development of early literacy. Parents who engage their children in engaging dialogs contribute to the acquisition of vital language skills, such as listening, speaking, comprehension, and familiarity with a range of vocabulary and idioms (Farrant & Zubrick, 2013; Hoff, 2003; Weigel et al., 2006, 2010). When reading is viewed as a sophisticated fusion of language skills, children's exposure to language-rich interactions enriches not only their language and literacy skills but also their critical thinking skills. Reese et al. (2010) emphasize the importance of dialogic engagement, expression of ideas, and exploration of concepts, arguing that these facets of language and reading acquisition can have far-reaching benefits for children.

In summary, the role of parental attitudes and involvement in early reading activities in the development of children's reading skills cannot be overstated. As evidenced by existing research, parental attitudes have a significant impact on the frequency, type, and quality of early reading activities and ultimately play a critical role in children's reading development. Parents' active engagement in reading activities, their modeling of positive reading behaviors, and the creation of a language-rich environment collectively contribute to children's critical language and literacy skills. These include print awareness, language fluency, vocabulary acquisition, reading comprehension, and critical thinking skills. In addition, providing a variety of reading materials in a home where reading is valued and encouraged strengthens children's literacy skills and fosters a lifelong passion for reading. This complex network of interactions underscores the critical role of parents as the most important influencers of their children's literacy development and demonstrates the importance of fostering positive parental attitudes toward reading. Therefore, fostering these positive parental attitudes and involvement in early reading activities is essential to improving children's literacy skills, ensuring their long-term academic success and instilling a lifelong passion for reading.

The present study

The poor performance of Emirati students on international reading assessments is of great concern, and requires extensive and careful scientific investigation to address this pressing educational challenge. Given the UAE's focused efforts to implement a number of literacy initiatives and the visionary goals outlined in Vision 2031, which aims to create a world-class education system (UAE Government, 2023), it is imperative to closely examine the various factors that influence Emirati students' reading literacy, with a particular focus on reading literacy in Arabic. While previous research offers insights into the synergies between parental attitudes toward reading and early literacy activities in the broader context of literacy development, there is a lack of knowledge about the nuances of these relationships specifically in the area of Arabic literacy among Emirati children. Therefore, the present study aims to fill this gap by investigating the following research questions:

1. To what extent are parental attitudes toward reading related to Emirati children's reading literacy in Arabic?
2. To what extent are early literacy activities and tasks related to Emirati children's reading literacy in Arabic?

3. To what extent do early literacy activities and tasks mediate the relationship between parental attitudes toward reading and reading literacy in Arabic among Emirati children?

This study is of great importance in both the scientific and practical fields of education, especially in the context of the UAE. By examining the relationship between parental attitudes toward reading and Arabic reading literacy among Emirati children, this study aims to fill the gaps in research that specifically addresses the development of Arabic reading literacy in the UAE. This study also contributes to our understanding of the dynamics and mechanisms by which early literacy engagement shapes reading ability by examining the predictive power of early literacy activities for Arabic reading proficiency. Furthermore, the study has important implications for educational policy and interventions. By examining the extent to which early literacy activities mediate the relationship between parental attitudes and literacy, it may offer invaluable insights to policymakers and educators. These insights can be used to develop effective strategies that strengthen parental engagement and optimize culturally and linguistically appropriate early Arabic literacy programs. This study takes a comprehensive approach by examining both parental attitudes and early literacy activities to gain a more holistic understanding of the factors that influence Arabic literacy development. This holistic perspective allows for a nuanced assessment of the multidimensional nature of literacy development and the interplay between home and school factors. Given the UAE's ambitious national educational goals, for which improving literacy is central to achieving, understanding the factors that contribute to Emirati children's Arabic literacy is critical. This study seeks to address this need. Improving Arabic literacy skills is not only critical for academic success, but also for maintaining and promoting national identity and cultural heritage. The results of the study can inform educational practice by helping educators adapt their teaching methods, curricula, and parent involvement programs to better support students' literacy development in Arabic. In summary, through its targeted research questions, this study has the potential to make a significant contribution to academic knowledge, inform policy and practice, and play a critical role in supporting the UAE's educational efforts in Arabic literacy development.

Methods

Data

The data for the study were drawn from the Progress in International Reading Literacy Study (PIRLS) 2016 database (<https://timssandpirls.bc.edu/pirls2016/international-data-base/index.html>). PIRLS is conducted every five years and provides data on reading literacy trends and information about students' home and school experiences in learning to read. The 2016 PIRLS database for the UAE contains valuable data on the reading literacy of Emirati fourth graders, as well as relevant background information, including parental attitudes toward reading and the frequency of early literacy activities. Using this dataset allows the current study to expand its implications beyond the immediate context and potentially inform broader educational strategies and policies aimed at improving Arabic literacy. A total of 4342 Emirati fourth graders completed the PIRLS 2016 reading assessments in Arabic ($M_{\text{age}} = 9.63$ $SD=0.51$; 54% female) and their parents or guardians completed the Learning to Read Survey (Home Questionnaire).

Measures

Parental attitudes toward reading (ASBHPLR)

To measure parental attitudes toward reading, parents of the participating students were asked to respond to a series of questions about their enjoyment of reading. The items were designed to cover a range of aspects related to reading (8 items, e.g., “I enjoy reading”). Responses were given on a 4-point Likert-type scale, ranging from 1 (*disagree a lot*) to 4 (*agree a lot*).

Early literacy activities before beginning primary school (ASBHELA)

To gain a comprehensive understanding of students’ early literacy environments, parents were asked to report on various literacy activities their children had engaged in prior to school enrollment. This included a wide range of activities known to contribute to early literacy development (9 items, e.g., “Talk about what you had read”). Parents were asked to indicate on a 3-point Likert-type scale from 1 (*never or almost never*) to 3 (*often*) how often these activities were performed.

Could do early literacy tasks when beginning primary school (ASBHELT)

In addition to measuring early literacy activities, PIRLS also assessed children’s early literacy skills at the beginning of the elementary school years. Parents were asked to report on their child’s ability to perform a range of early literacy tasks at this time (6 items, e.g., “Read sentences”). Parents rated their child’s abilities on a 4-point Likert-type scale, ranging from 1 (*not at all*) to 4 (*very well*).

Reading literacy in Arabic

The PIRLS 2016 reading literacy scale ranged from 0 to 1000 and included two main purposes of reading (literary experience and acquire and use information) and four comprehension processes (focus on and retrieve explicitly stated information, make straightforward inferences, interpret and integrate ideas and information, and evaluate and critique content and textual elements). The PIRLS 2016 reading assessment included 12 reading passages (six for each reading purpose) and 175 tasks consisting of multiple-choice items and constructed responses (Mullis et al., 2017). Students’ responses to these tasks were scaled using Item Response Theory (IRT) to provide an assessment of reading proficiency (Martin et al., 2017). To account for uncertainty in measurement from a limited set of items, PIRLS reports reading proficiency in the form of five plausible values for each student (ASRREA01 - ASRREA05), using a methodology that offers multiple imputed estimates of a student’s true proficiency (Martin et al., 2017). The plausible scores are generated through a conditioning process that accounts for covariates such as student and contextual background information that influence test scores. The resulting five plausible values, which represent equally likely estimates of a student’s true proficiency, are used in subsequent statistical analyses (Martin et al., 2017). This approach accounts for the inherent uncertainty in proficiency measurement and provides more accurate standard errors and confidence intervals (Wu, 2005). This method provides a more nuanced understanding of fourth-grade reading proficiency, making it a valuable tool for assessing reading proficiency and informing educational policy and practice.

Control variables

The control variables in the study were gender (1 = female, 0 = male) and home resources for learning (ASBGHRL). Two primary sources of information were used for the PIRLS 2016 home resources for learning scale: students and their parents. Students were asked to provide information on the number of books and other learning aids available at home. Parents, on the other hand, were asked to provide information about the number of children's books in the home, their level of education, and their occupations. Based on these responses, each student was assigned a score on the home resources for learning scale (Martin et al., 2017).

Data analytic strategy

Prior to conducting the mediation analysis, IBM SPSS Statistics Version 28.0 was used to check assumptions for the statistical tests, including linearity, normality, homoscedasticity, and multicollinearity between predictors. To test the assumption of linearity, scatter plots of the residuals against the predicted values were created in SPSS. By plotting each of the predictor variables against the dependent variable, it was possible to determine whether a linear relationship existed between them (Tabachnick & Fidell, 2019). To assess normality, histogram and P-P plots of the standardized residuals were generated, and Kolmogorov-Smirnov and Shapiro-Wilk tests were performed in SPSS. The histogram provides a visual representation of the data distribution, while the P-P plots compare the distribution of the residuals to a normal distribution (Tabachnick & Fidell, 2019). The Kolmogorov-Smirnov and Shapiro-Wilk tests provide statistical evidence of the normality of the data distribution (Tabachnick & Fidell, 2019). To test for the presence of homoscedasticity, the scatter plots of the residuals were re-examined relative to the predicted values. Homoscedasticity is characterized by uniformly distributed residuals over the range of predicted values. Therefore, a scatter plot showing a uniform distribution of residuals over the entire range of predicted values indicates the presence of homoscedasticity (Tabachnick & Fidell, 2019). To assess the presence of multicollinearity and determine whether predictor variables were highly correlated with each other, variance inflation factor (VIF) and tolerance were calculated using SPSS. VIF values greater than 5 or 10 and tolerance values less than 0.1 or 0.2 are usually considered to indicate multicollinearity (Tabachnick & Fidell, 2019).

The data analysis strategy used in this study aimed to investigate the relationships between parents' attitudes toward reading, early literacy activities before entering primary school, ability to perform early literacy tasks upon entering primary school, and reading literacy in Arabic. A mediation analysis was conducted using Mplus version 8.9 (Muthén & Muthén, 2022) to examine both direct and indirect effects (see Fig. 1). Parental attitudes toward reading served as the independent variable, early literacy activities before beginning primary school and ability to perform early literacy tasks when beginning primary school were the mediators, and reading literacy in Arabic was the dependent variable. Control variables were also included in the model to account for potential confounding effects. The analysis involved running multiple regression models to estimate path coefficients. Further, a bootstrapping method was used to estimate the indirect effects and their confidence intervals. Bootstrapping is a nonparametric resampling method that does not assume a normal distribution of indirect effects. This method is considered robust and is generally recommended for mediation analyses because it

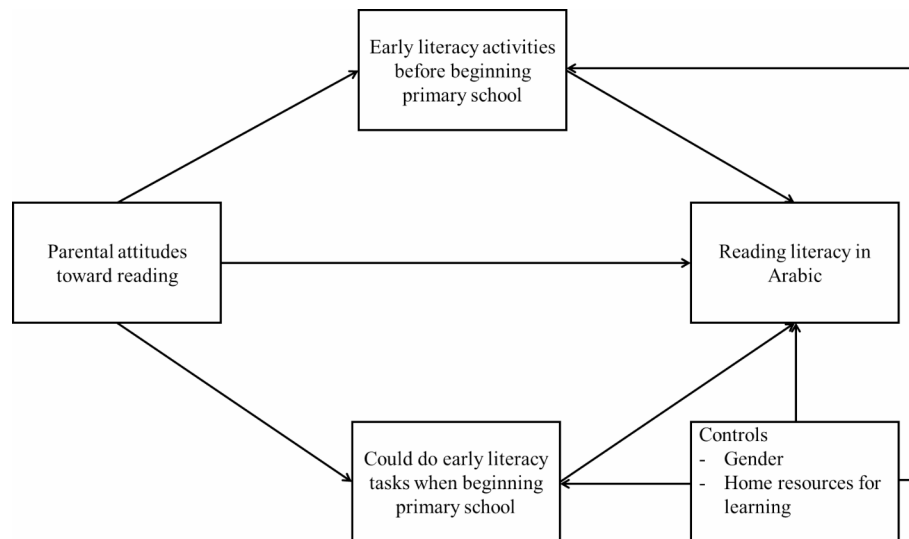


Fig. 1 The hypothesized model

increases the precision of confidence interval estimates (Hayes, 2009). In the present study, the bootstrapping procedure involved generating an empirical approximation of the sampling distribution of indirect effects by repeatedly resampling from the data set with replacement. For each of the 20,000 resampled data sets, the mediation model was estimated and the indirect effects were recalculated. The distribution of these 20,000 indirect effects estimates was then used to calculate bias-corrected 95% confidence intervals. Bias-corrected confidence intervals are particularly useful because they adjust for any bias in the standard error estimate and provide a more accurate estimate of the range into which the true indirect effect is likely to fall (Hayes, 2013). An indirect effect was considered statistically significant if its 95% confidence intervals did not encompass zero (Hayes, 2013). The overall student sampling weight, TOTWGT, was used in all analyses.

Results

Prior to conducting the mediation analysis, preliminary analyses were conducted to screen the data, compute descriptive statistics, and evaluate the assumptions required to run the mediation model. To test the assumption of linearity, scatter plots of the residuals against the predicted values were constructed using IBM SPSS Statistics. Each predictor variable was plotted against the dependent variable to see if there was a linear relationship between them. Visual inspection of the scatter plots revealed a consistent pattern with no distinct curves or deviations, indicating that the linearity assumption was met for each of the predictor variables with respect to the dependent variable. Normality of the residuals was assessed using histograms and P-P plots of the standardized residuals. In addition, Kolmogorov-Smirnov and Shapiro-Wilk tests were performed. The histogram of the residuals showed a bell-shaped curve, indicating a normal distribution. Besides, the P-P plots showed that the points were closely aligned on the diagonal, further supporting the assumption of normality. Both the Kolmogorov-Smirnov and Shapiro-Wilk tests yielded *p*-values greater than 0.05, suggesting that the distribution of the residuals was not significantly different from normal. To verify homoscedasticity, the scatter plots of the residuals were reexamined against the predicted values. On visual

inspection, the scatter plots showed a random scatter of points with no discernible pattern or funnel shape, indicating that the assumption of homoscedasticity was satisfied. To ensure that multicollinearity was not present, the variance inflation factor (VIF) and tolerance statistics were calculated. The VIF values for all predictor variables were well below the commonly used thresholds of 5 or 10, and the tolerance values were above the thresholds of 0.1 or 0.2, indicating that there was no multicollinearity among the predictors. In sum, these preliminary analyses indicated that the data met the necessary assumptions for conducting a mediation analysis.

Table 1 presents the descriptive statistics, bivariate correlations, and reliability coefficients for the variables and measures under examination in this study. Statistically significant correlations were observed among key variables of interest in our study. Parental attitudes toward reading demonstrated a small, yet significant, positive correlation with reading literacy in Arabic ($r=.14, p<.01$). Parental attitudes toward reading also exhibited a moderate positive relationship with early literacy activities ($r=.33, p<.01$). There was also a small-to-moderate positive correlation between parental attitudes toward reading and the children's ability to perform early literacy tasks ($r=.18, p<.01$). Further, we found a moderate correlation between early literacy activities and reading literacy in Arabic ($r=.23, p<.01$). The strongest observed correlation was between the ability to perform early literacy tasks and reading literacy in Arabic ($r=.37, p<.01$).

The results of the mediation analysis showed statistically significant relationships between parental attitudes toward reading and children's participation in early literacy activities before primary school, children's abilities to complete early literacy tasks at the beginning of primary school, and their later reading literacy in Arabic (see Fig. 2). Parental attitudes towards reading were found to significantly predict children's participation in early literacy activities before they started primary school, $\beta=0.287, p<.001$, indicating a positive relationship between these two factors. Parental attitudes towards reading also significantly and positively predicted children's ability to complete early literacy tasks at the beginning of primary school, $\beta=0.068, p<.001$. Furthermore, children's involvement in early literacy activities before primary school was a significant positive predictor of reading literacy in Arabic, $\beta=0.072, p<.001$. Similarly, children's ability to complete early literacy tasks at the beginning of primary school was also significantly and positively associated with reading literacy in Arabic, $\beta=0.295, p<.001$. In addition, mediation analysis also revealed significant indirect effects of parental attitudes toward reading on children's reading literacy in Arabic. Specifically, children's engagement in early literacy activities before primary school significantly mediated the relationship

Table 1 Descriptive statistics, bivariate correlations, and reliability coefficients

	1	2	3	4	5	6
1. Reading literacy in Arabic	—					
2. Parental attitudes toward reading	0.14*	—				
3. Early literacy activities	0.23*	0.33*	—			
4. Could do early literacy tasks	0.37*	0.18*	0.35*	—		
5. Home resources for learning	0.20*	0.20*	0.22*	0.12*	—	
6. Gender	0.24*	0.04*	0.11*	0.09*	0.05*	—
<i>M</i>	401.68	9.34	9.77	10.60	9.57	0.52
<i>SD</i>	97.19	1.24	1.68	2.02	1.26	0.50
<i>α</i>		0.79	0.73	0.90	0.60	

* $p<.01$

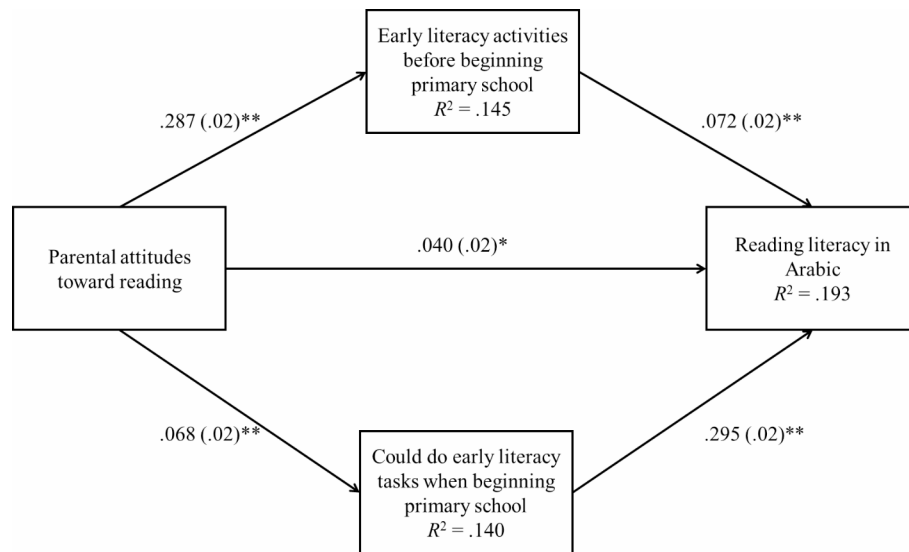


Fig. 2 Results of mediation analysis. Standard errors are in parentheses. The control variables were included in the analysis. For the sake of clarity, they are not included in the figure. * $p < .05$. ** $p < .001$

between parental attitudes toward reading and children's reading literacy in Arabic, $\beta = 0.021$, $SE = 0.00$, 95% CI [0.012, 0.029]. Similarly, children's ability to complete early literacy tasks at the beginning of primary school also significantly mediated the relationship between parental attitudes toward reading and children's reading literacy in Arabic, $\beta = 0.020$, $SE = 0.00$, 95% CI [0.012, 0.028].

Discussion

In an attempt to address the limited literature on literacy development in the UAE, the present study examined the interplay between parental attitudes toward reading, early literacy activities, early literacy tasks, and children's literacy in Arabic. The importance of parental attitudes toward reading and early reading experiences as cornerstones for successful reading development is well established in a variety of contexts, but specific research focusing on the Emirati setting has been sparse. The study was guided by three research questions that were critical to unraveling the complex relationships among the variables in question. First, the study sought to determine the extent to which parental attitudes toward reading predicted children's reading proficiency in Arabic. This was important to determine whether fostering positive parental attitudes toward reading can create an environment that supports literacy development in Emirati children. Second, the study examined how participation in early literacy activities prior to the start of formal education and the ability to complete early literacy tasks upon entry into elementary school affected reading proficiency in Arabic. The goal was to determine whether this engagement and these skills serve as foundational elements for reading literacy. Finally, the study examined the mediating role of early literacy activities and early literacy tasks in the relationship between parental attitudes toward reading and children's reading literacy in Arabic. This part of the study aimed to understand the mechanisms through which early literacy activities and tasks might link parental attitudes toward reading to children's reading outcomes.

RQ1 To what extent are parental attitudes toward reading related to Emirati children's reading literacy in Arabic?

A central focus of this study was to investigate the relationship between parental attitudes toward reading and reading literacy in Arabic among Emirati children. Our findings highlight the importance of parental attitudes as a predictor of children's reading literacy in Arabic. This finding is consistent with the existing literature, which emphasizes the importance of parental engagement and positive attitudes toward reading in the development of children's reading skills (Bus et al., 1995; Demir-Lira et al., 2019; Mol et al., 2008; Sénéchal & LeFevre, 2002;). Our analysis revealed a positive relationship between parental attitudes toward reading and children's reading literacy in Arabic. This suggests that children whose parents have positive attitudes toward reading are likely to perform better in reading Arabic texts. This result can be interpreted using social learning theory (Bandura, 1977), which states that children learn and model behaviors and attitudes from significant figures in their lives, especially their parents. If parents have positive attitudes toward reading and value literacy, children are likely to adopt similar attitudes and engage more effectively in reading activities. This, in turn, may improve their reading skills in their native language, which for Emirati children is Arabic. Also, it is important to consider the cultural context in the UAE. In a society where traditions and cultural values are deeply rooted, parents' attitudes toward reading can be a reflection of broader societal values. In cases where literacy and education are highly valued, parental attitudes may naturally lean toward the positive spectrum. This cultural emphasis may, in turn, have a cascading effect on children's literacy development. It is also worth noting that parental attitudes toward reading can influence the home reading environment, which is a critical factor in children's literacy development (Sénéchal & LeFevre, 2014). Parents who have positive attitudes toward reading could create a richer reading environment at home by providing more reading materials and engaging in shared reading activities. These practices can contribute to the development of children's reading skills.

RQ2 To what extent are early literacy activities and tasks related to Emirati children's reading literacy in Arabic?

A key aspect of the current study was to investigate the extent to which early reading activities predict reading literacy in Arabic among Emirati children. Our results provide evidence that participation in early literacy activities is a predictor of reading literacy in Arabic. This finding is congruent with the literature that highlights the role of early reading experiences in the development of reading literacy (Whitehurst & Lonigan, 1998; Dickinson & Tabors, 2001). Specifically, our results show that children who participate in a variety of literacy activities before entering primary school show improved reading literacy in Arabic. These early literacy activities can include a range of experiences, such as alphabet recognition, phonemic awareness, shared reading, and early writing experiences. Participation in such activities can provide a solid foundation for literacy development by promoting language comprehension, decoding skills, and vocabulary acquisition, which are integral components of literacy (National Early Literacy Panel, 2008). The positive relationship between early literacy activities and literacy in Arabic can also be seen within the constructivist perspective (Piaget, 1967), which assumes that learning is an active process in which learners construct their knowledge through

experiences. When children are exposed to early literacy activities, they gain the experiences necessary to develop an understanding of written language, and this foundation is likely to facilitate their literacy development. Given the linguistic features of Arabic, which include complex morphological structures and a rich root and pattern system (Saiegh-Haddad & Henkin-Roitfarb, 2014), exposure to early literacy activities may be even more important for Emirati children. These activities can help children develop an understanding of the unique features of Arabic, which in turn facilitates fluent reading and comprehension.

The purpose of our study was also to explore the relationship between early literacy tasks and Emirati children's reading literacy in Arabic. Our results suggest that the ability to complete early literacy tasks at the beginning of primary school is a significant predictor of reading literacy in Arabic among Emirati children. This is consistent with existing research suggesting that acquisition and mastery of early literacy skills are fundamental to literacy development (Niklas & Schneider, 2015, 2017; Reese et al., 2010, Sénéchal & LeFevre, 2014). Early literacy tasks typically include skills such as letter recognition, sound-letter correspondence, early writing skills, and basic reading comprehension. Our results suggest that mastery of these tasks in the early stages of elementary education is associated with improved reading proficiency in Arabic. It can be concluded that these tasks are crucial for children to acquire the necessary skills to decode Arabic texts and understand the language, which has unique linguistic features such as a rich morphological structure and a deep orthographic system (Abu-Rabia, 2001). This finding can also be understood in the context of the simple view of reading (Gough & Tunmer, 1986), which assumes that reading comprehension is a product of decoding and language comprehension. Early reading tasks such as letter recognition and sound-letter correspondence contribute to decoding ability, while tasks such as early reading comprehension contribute to language comprehension. Mastery of these tasks equips children with the tools they need to become effective readers.

RQ3 To what extent do early literacy activities and tasks mediate the relationship between parental attitudes toward reading and reading literacy in Arabic among Emirati children?

The study further examined the extent to which early literacy activities and children's ability to complete early literacy tasks act as mediators of the relationship between parental attitudes toward reading and reading literacy in Arabic among Emirati children. The results suggest that both early literacy activities and children's ability to complete early literacy tasks act as significant mediators in this relationship. These findings are consistent with the existing literature, which suggests that parental engagement and support can positively influence children's literacy development by promoting early reading experiences (Sénéchal & LeFevre, 2002; Weigel et al., 2006). More specifically, our study shows that positive parental attitudes toward reading are associated with an increase in early literacy activities and an improvement in children's ability to complete early literacy tasks. Subsequently, participation in these early literacy activities and tasks is a significant predictor of reading proficiency in Arabic among Emirati children. This suggests that parents who have positive attitudes toward reading are more likely to provide opportunities for their children to participate in literacy activities and tasks, which in turn promotes literacy development. Understanding this mediating effect can

be enriched by the perspective of Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1979), which emphasizes the interconnectedness of various environmental systems in influencing child development. Within this framework, parental attitudes form one element of the microsystem that directly affects the child's immediate environment. When this microsystem embodies positive attitudes toward reading, it helps create a home environment conducive to early reading activities and consequently sets in motion a domino effect that promotes the child's reading development.

Implications for practice and policy

The findings of this study have several implications for educational practice and policy, particularly in the UAE.

Implications for practice

Teacher training and support

The findings of this study, which highlight the importance of parental attitudes and early reading activities, underscore the need for teachers to be able to build a synergistic relationship with parents. It is imperative that teachers receive specialized training that enables them to understand the subtleties of parental attitudes and the connections between these attitudes and early literacy development. This training should include strategies for effective communication with parents, as well as methods for getting parents to take an active role in their children's literacy development. Not only are the communication aspects critical, but the content of that communication must also steer parents in the right direction. In addition to training, it is important that teachers receive assistance in assembling or obtaining resources to share with parents. These resources should serve as a beacon, providing parents with valuable guidance on how to engage in productive reading activities with their children at home and create an environment that is conducive to reading. By providing teachers with specialized training and helping them develop parental resources, a formidable alliance can be forged between schools and homes. This alliance is important to ensure that children, both at school and at home, are surrounded by an enriching environment that not only promotes literacy, but also instills a lifelong love of learning.

Parent-teacher collaboration

Promoting children's literacy skills requires solid collaboration between parents and teachers. It is important to share responsibilities and use the synergy between home and school to create an enriching network for strengthening children's literacy skills. To accomplish this, schools should strive to establish a foundation for seamless and regular communication between parents and teachers. This can be done through a variety of channels, including parent-teacher conferences, routine updates via communication apps, newsletters, and informal meetings. Frequent interaction helps parents stay informed about their child's progress and understand the school's expectations and strategies. In addition, schools can foster a sense of community by hosting literacy events. These events serve as a gathering place where parents and teachers can participate in activities that promote reading. Schools could host book fairs to introduce children to a variety of reading materials, organize reading clubs to promote shared reading experiences, and hold workshops to equip parents with strategies and resources for promoting

literacy at home. Bringing these initiatives together helps create an environment that is not only supportive, but also aware of the shared role that parents and teachers play in promoting children's literacy. Through these concerted efforts, a cohesive community—united in purpose and enriched by shared experiences and knowledge—becomes the foundation upon which children's literacy skills are honed and nurtured.

Creating literacy-rich environments

Creating an environment conducive to reading is fundamental to the development of children's reading skills. To this end, conducive learning spaces must be created both at school and at home. Central to this is ensuring access to reading materials. Schools should take the initiative to provide students with a diverse range of reading materials in Arabic that cater to different interests and reading levels. At the same time, parents should be encouraged to foster a culture of reading at home by developing a home library, albeit modest, to ensure that children have access to books outside of school. In addition to access to materials, the physical space in which learning takes place is also important. Schools should invest in creating inviting and stimulating learning spaces, such as reading nooks. These spaces should be equipped with comfortable seating, adequate lighting, and a variety of books to encourage independent reading and foster a love of literature in students. Parents should also be empowered and guided to recreate such spaces at home. It can be helpful to give parents practical ideas and tips on how to set up inviting reading corners, select age-appropriate books, and create a quiet, distraction-free environment. Also, schools can host workshops or provide resources to help parents choose reading materials and design the space. Ultimately, by working together to create a reading-friendly environment, both in educational settings and at home, we can build a solid foundation that supports children's continued engagement with text, nurtures their reading skills, and instills a lifelong love of reading.

Monitoring and feedback

Continuous monitoring and assessment of children's reading skills is an important component of identifying and addressing learning needs in a timely and effective manner. Schools should use a variety of assessment tools to closely monitor and track children's reading development. These tools could include formal standardized assessments, informal observations, and portfolio assessments that include collections of student work over time. These different approaches provide a more holistic and authentic picture of a child's progress and the specific areas that may need attention. Moreover, it is important that the lessons learned from these assessments be shared with parents in a constructive and collaborative spirit. Detailed feedback to parents, including specific accomplishments and areas needing improvement, provides them with the understanding needed to support their child's learning at home. Further, feedback should not be one-sided, but should also encourage parents to contribute. Parents should be actively encouraged to share their observations and insights about their child's reading habits and challenges at home. This information is a valuable resource for educators to understand the full range of a child's reading experiences so that they can adjust classroom strategies and interventions accordingly. Incorporating this parental input ensures a more aligned and responsive approach to supporting each child's unique learning journey. The combination of systematic assessments, constructive feedback, and two-way communication

between educators and parents creates a supportive network that surrounds the child and provides the tailored support he or she needs to thrive in literacy development.

Policy implications

Parental education programs

Parent education programs occupy an important place on the educational development spectrum, providing parents with the knowledge and tools they need to effectively support their children's literacy. Recognizing the critical role of parents, policymakers should devote attention and resources to the development and implementation of these programs. One of the primary focuses of parent education programs should be to emphasize the importance of literacy. It is important that parents understand that literacy is not just a school skill, but a fundamental life skill that affects a child's cognitive development, academic achievement, and future job prospects. Programs should provide insight into the stages of literacy development and explain how early reading experiences influence brain development. Another important element is educating parents about how much their attitudes and involvement can influence their children's attitudes toward reading. Parents should be made aware that their own attitudes toward reading, the value they place on education, and their engagement in reading activities with their children can set the tone for a child's motivation and interest in reading. Positive reinforcement, praise, and genuine interest in what children are reading can greatly increase their confidence and enthusiasm. Furthermore, these programs should provide parents with practical strategies for engaging in early reading activities and tasks. These include training on how to read aloud effectively, how to ask open-ended questions that encourage critical thinking, and how to select age-appropriate reading materials. It is important to provide parents with a collection of activities that they can easily incorporate into their daily routines. These can include simple games, storytelling, and creating a reading-friendly environment at home. Policymakers should also consider the diverse backgrounds of families. Parent education programs need to be culturally sensitive and inclusive, taking into account the needs of families from different socioeconomic backgrounds. In certain cases, programs must provide multilingual resources or target parents who have had limited educational opportunities themselves. Finally, parent education programs should provide opportunities for ongoing support and community building among parents. This could include the establishment of support groups for parents, forums for sharing experiences and ideas, and ongoing access to resources and expertise. In essence, parent education programs should be comprehensive, practical, and accessible, serving not only as a source of information but also as a support network that emphasizes the collective responsibility and potential of parental involvement in literacy development. Through these programs, a community of informed and engaged parents can be fostered, which is essential to the holistic development of children's literacy skills.

Integration into national education goals

Integrating findings from literacy development studies into national education goals, such as the UAE's Vision 2031, is paramount to driving systemic change and achieving long-term education goals. The UAE Vision 2031 aims to promote a knowledge-based economy in which education plays a fundamental role in producing a highly skilled and

competent workforce (UAE Government, 2023). One of the critical areas where inclusion could make a significant difference is in recognizing the role of parental involvement in early literacy activities. First, Vision 2031 goals and early literacy programs need to be aligned. National education goals should explicitly mention the importance of early literacy as a cornerstone of holistic educational development. This should be accompanied by clear strategies, milestones, and measurable indicators that track the progress of early literacy initiatives in the context of the broader educational goals. Further, to make the idea of parent involvement a reality, the National Education Strategy should take a multi-pronged approach. This includes developing policies that encourage schools to create frameworks for parental involvement. Schools should be incentivized to cultivate relationships with parents and actively involve them in literacy programs. In addition, public education campaigns should be conducted at the national level to raise awareness among parents and the general public about the importance of early literacy. Moreover, educators should be trained not only to teach literacy skills, but also to deal effectively with parents and to understand the cultural nuances that might influence parental attitudes and engagement. Allocation of resources is also a critical component. The government should allocate funds specifically for early literacy development, parent engagement programs, and the development of learning materials and resources. These funds should be used effectively to ensure that schools, particularly in underprivileged areas, are adequately resourced to support early literacy initiatives. Another aspect that deserves attention is evaluation and feedback mechanisms. The national strategy should include robust evaluation tools to regularly assess the effectiveness of early literacy programs. These include student literacy assessments, parent feedback, and teacher evaluations. These data should be systematically analyzed to inform policy adjustments and program improvements. In sum, by strategically integrating early literacy evidence and parental involvement into national education goals, the UAE can work toward creating a synergistic education ecosystem that recognizes and leverages the potential of parental engagement. Such an approach can foster a culture of learning and development that is consistent with the aspirations of Vision 2031 and ultimately contributes to the nation's transition to a knowledge-based economy and human capital enrichment.

Resource allocation

Allocating resources to early childhood education, particularly early literacy, is imperative given the compelling evidence that early intervention plays a critical role in children's long-term academic success and well-being. Allocation of resources should be strategic and multifaceted to address the various aspects of early literacy development. First, investment in human resources is essential. Hiring and training highly qualified educators who specialize in early childhood education and literacy is critical. Teachers must be equipped with the knowledge and skills they need to effectively promote early literacy development. This includes not only knowing how to teach reading and writing, but also how to engage children in meaningful interactions, how to use assessment tools, and how to collaborate with parents. Besides, it is necessary to develop and obtain appropriate instructional materials and resources. This includes a range of age-appropriate books, digital resources, and educational toys that engage children in literacy activities. Physical infrastructure is another important aspect of resource allocation. Creating learning environments that support early literacy development requires investments in

physical space. This includes classrooms that are vibrant, well-lit, and have areas designated for reading and writing activities. Classroom libraries, reading corners, and technologically equipped spaces for digital reading activities are examples of how the physical environment can be tailored to support early literacy. Building partnerships with outside entities can improve the availability of resources. For example, collaboration with publishers could facilitate access to books, while partnerships with universities could contribute to research and teacher training. Funding should also be made available for parent involvement programs. As the study highlights the importance of early literacy activities at home, funding should be allocated to develop programs that educate and empower parents to become actively involved in their children's literacy development. These may include workshops, home literacy kits, and communication platforms that enable ongoing collaboration between educators and parents.

However, monitoring and evaluation are critical to the success of early learning programs. Resources must be allocated to develop robust assessment tools as well as train educators to use these tools effectively. The data collected through these assessments are invaluable for ongoing policy improvement and adaptation. Finally, it is critical that equitable distribution be considered in resource allocation to ensure that underprivileged and marginalized communities receive adequate support. Targeted interventions in these communities can help close educational gaps and promote social equity. In summary, by prudently allocating resources across multiple dimensions of early childhood education with a focus on literacy, policymakers can trigger a positive domino effect that not only improves educational outcomes but also contributes to children's holistic development and society's long-term prosperity.

Curriculum development

Developing curricula that emphasize early literacy tasks and activities while encouraging parental involvement is an essential part of creating a well-rounded educational environment for children. When curriculum designers recognize the important role that both the school and the home play in the development of a child's literacy skills, they can create curricula that seamlessly connect classroom instruction with home learning. First and foremost, curriculum designers should conduct extensive research to understand the essential components of early literacy development. This includes understanding the development of phonemic awareness, vocabulary, reading comprehension, and reading fluency. Further, the curriculum should also emphasize the importance of fostering a love of reading through exposure to a wide range of literature, including stories, poetry, and informational texts. Once the core components of literacy development are identified, curriculum designers should focus on making meaningful connections between classroom learning and home activities. For example, they can design homework and activities that require children to engage with texts at home, perhaps reading a book with a family member or even writing a short story or journal entry. Also, curriculum designers can integrate technology to facilitate parental involvement. Through the use of learning apps and online platforms, parents can be actively involved in their child's learning process. Apps that allow parents to track reading progress, receive book recommendations, and even communicate with educators, for example, are invaluable tools for promoting literacy. Another important aspect is integrating practical guidance and resources for parents into the curriculum. This can include handouts, online tutorials,

or workshops that provide parents with insights and strategies to support their child's reading development. This ensures that parents are not only involved, but also equipped with the knowledge and tools they need to effectively support their child's reading development. Finally, a feedback mechanism should be built into the curriculum to allow two-way communication between educators and parents. Parents can provide insight into the child's reading habits and preferences at home, which can be invaluable to teachers in adjusting instruction. Likewise, teachers can provide feedback to parents on how to address specific reading issues. Involving parents in a holistic approach to early literacy development can ensure that children in different settings receive consistent support. Such a curriculum not only promotes literacy skills, but also strengthens the bond between school and home, paving the way for a more integrated, supportive, and successful educational experience for children.

Limitations of the study and directions for future research

The following are some limitations of this study. First, the cross-sectional nature of the study limits its ability to track changes over time, establish causality, and account for cohort effects and contextual changes, making it only a snapshot that may not represent broader trends. To address the limitations of the cross-sectional nature of the study, future research should consider the use of longitudinal studies to observe changes over time and establish causality, incorporate cohort analysis to account for generational differences, use time-series analysis to understand trends, and adopt a mixed-methods approach to gain contextual insights. Second, when conducting research that uses questionnaires or surveys to collect data, particularly in the context of parental attitudes and early childhood literacy activities, several forms of self-report bias can affect the results (Podsakoff et al., 2003). One source is social desirability, in which parents may present themselves in a favorable light in order to look better in the eyes of the researchers. Another source is recall bias, which may affect how accurately parents recall past events and activities. Subjectivity in interpreting the questions can also be a problem, as different parents might understand the questions differently. There is also a tendency known as acquiescence bias, in which some individuals tend to agree with statements regardless of their accuracy. To mitigate these biases, it may be beneficial to use additional data collection methods. Observation of parent-child interactions or reports from third parties, such as teachers, may provide additional perspectives and help to counteract the biases associated with self-report. Third, this study focuses on the literacy skills of Emirati fourth graders in Arabic and therefore has limited applicability to other grade levels, cultures, or languages. Future research should incorporate different cultural settings, examine literacy skills in different languages, include different grade levels, and conduct comparative studies. Further, longitudinal studies, mixed methods, and the inclusion of educators' perspectives can provide deeper insights into literacy development in different contexts. Finally, the study may not have included all relevant control variables, which could lead to omitted variable bias. This means that there may be factors that influence the relationships studied but were not included in the analysis. To address this limitation, future research should aim to identify and include additional control variables that may have an impact on the variables of interest in the study. In this way, researchers can minimize potential bias and gain a more comprehensive understanding of the relationships examined in the study.

In conclusion, this study has provided valuable insights into the critical role of parental attitudes and early literacy activities in the development of children's reading literacy in Arabic in the UAE. The findings highlight the importance of parental engagement and support in promoting children's early literacy development in the Emirates. However, it is important to acknowledge the limitations of the study. The cross-sectional nature of the data limits our ability to establish causal relationships or track changes over time, which warrants caution when interpreting the results. In addition, the use of self-reporting carries the possibility of bias, and the generalizability of the findings may be limited to the specific cultural and linguistic context of the UAE. Despite these limitations, the study offers valuable insights that can inform future research and educational practice in the UAE. Conducting longitudinal studies that track children's literacy development over time would provide a deeper understanding of the long-term effects of parental attitudes and early reading activities on literacy. Further, incorporating multiple data collection methods, such as third-party observations and assessments, would allow for a more comprehensive and objective assessment of children's reading skills. To improve the generalizability and robustness of the findings, future research should consider a broader range of confounding variables that might influence children's reading skills in the Emirates. Also, expanding the study to include different grade levels, cultural backgrounds, and languages prevalent in the UAE would allow for a more comprehensive understanding of the factors that influence reading literacy in this specific context. By addressing these limitations and building on the findings of this study, educators, policymakers, and researchers in the UAE can work toward developing effective strategies to promote children's literacy. This will not only foster a lifelong love of reading, but will also enable children to succeed academically and contribute meaningfully to their communities and society at large.

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Data availability

The datasets supporting the conclusions of this article are openly accessible and can be downloaded as public use files from the IEA's website: <https://www.iea.nl/data-tools/repository/reds>.

Declarations**Competing interests**

The authors declare that they have no competing interests.

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