

Portuguese Teachers' Beliefs and Practices About Transition from Preschool to Primary School

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ABSTRACT

The transition from preschool to first grade is a crucial milestone in early education, influencing children's academic and social development. This process involves significant changes in educational settings, teaching approaches, and peer interactions. Teachers play a crucial role in shaping children's transition experiences and understanding their beliefs and practices can provide valuable insights into improving transition support strategies. *Research Findings:* This study examined the beliefs and practices of 1321 preschool teachers and 918 primary school teachers in Portugal regarding the transition to first grade. Using structural equation modeling, we analyzed teachers' perceptions about the conditions that facilitate or hinder the transition, the activities they implement, and the challenges they encounter. Results showed that both groups of teachers largely agreed on key conditions affecting transition success. Furthermore, a relationship was found between teachers' beliefs and the practices they adopt to support children's adaptation. *Practice or Policy:* These findings highlight the need for structured transition support in schools. Professional development programs should enhance teachers' understanding of effective transition strategies, fostering continuity in learning. Strengthening collaboration between pre-school and primary school teachers can help create smoother transitions, promoting children's academic and social adjustment.

HIGHLIGHTS

- *Shared Perspectives* – Preschool and primary school teachers agree on key conditions shaping the transition.
- *Belief-Practice Link* – Teachers' beliefs shape the transition strategies they implement.
- *Need for Collaboration* – Stronger educator collaboration improves transition support and student adaptation.

Introduction

Educational transitions represent critical phases involving shifts across learning environments and social contexts (Abellán, 2019; Vorkapić & LoCasale-Crouch, 2021).

These recurrent processes demand adaptation from children, families, and educators to new expectations and routines (OECD, 2021; Then & Pohlmann-Rother, 2023). While transitions offer developmental opportunities, they also pose risks of disruption affecting children's sense of security

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📎 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/10409289.2026.2672538>

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and belonging (Abellán, 2019; Dockett et al., 2017; Wilders & Wood, 2023). Embedded within socio-cultural and policy frameworks, transitions must be considered in light of local and global contexts (OECD, 2021; Seabra-Santos et al., 2022).

Recent studies have highlighted that transitions are influenced by individual, relational, and systemic conditions that encompass cognitive, emotional, and social dimensions (Blair & Raver, 2015; Donaldson et al., 2023). The quality of these experiences has a critical impact on children's academic engagement, social adjustment, and long-term outcomes (Dunlop et al., 2024; OECD, 2021). Current frameworks emphasize continuity, collaboration between early childhood and primary educators, and family involvement to mitigate stress (Dunlop et al., 2024; Lopes da Silva et al., 2016; López & Benner, 2025). Moreover, culturally responsive and equity-focused practices are key to reducing disparities and promoting inclusive settings (Lim et al., 2021; UNESCO, 2021).

Cross-national studies reveal diverse transition management strategies, with countries such as Finland, Canada, and Australia implementing structured supports to enhance equity and facilitate smoother adjustments (Havu-Nuutinen et al., 2022; OECD, 2021; Virtanen et al., 2020). In Portugal, the Curricular Guidelines for Preschool Education advocate the integration of transition-supportive activities within pedagogical planning (Lopes da Silva et al., 2016). However, persistent challenges – particularly for vulnerable children – highlight the need for inclusive, contextually informed policies grounded in recent empirical evidence (Lim et al., 2021; Seabra-Santos et al., 2022; Then, 2024).

Recent research underscores the critical role of educational transitions and the necessity for coordinated, reflective efforts by educational communities to foster positive outcomes (Fabian & Dunlop, 2007; OECD, 2021). The transition from preschool to primary school constitutes a major developmental milestone with significant academic, social, and emotional impacts on children and families (Early et al., 2001; Margetts, 2009; Seabra-Santos et al., 2022). Supporting children's well-being and readiness during this phase is increasingly acknowledged as vital for lifelong learning and equity (Margetts, 2024; OECD, 2021).

Though it is often perceived as a natural part of a child's development path (Griebel & Niesel, 2009; Margetts & Phatudi, 2013), this transition is widely recognized as a potent source of stress, evoking feelings of insecurity, anxiety, and discomfort in both children and their families (Liu et al., 2022; Vorkapić & LoCasale-Crouch, 2021). Studies conducted in Australia, New Zealand, Ireland, and Scotland have linked negative transition experiences to behavioral difficulties, reduced school engagement, and increased risk of dropout, especially among children from socioeconomically disadvantaged backgrounds (Dockett & Perry, 2013; Morton et al., 2024; Smyth & Privalko, 2024). In contrast, positive transition experiences are associated with better academic performance, emotional stability, and social integration (Dunlop & Fabian, 2007; González-Moreira et al., 2021).

However, evidence regarding the long-term impact of transition experiences presents a more nuanced picture. Longitudinal research indicates that positive transition practices are consistently associated with better socio-emotional adjustment, higher levels of school engagement, and stronger academic skills during the early years of primary education, with effects being most evident in the short to medium term (Ahtola et al., 2011; LoCasale-Crouch et al., 2008; Peters, 2010). Nevertheless, the magnitude of these associations is generally small to moderate. It tends to diminish over time, particularly when broader structural and contextual elements – such as socioeconomic background, overall instructional quality, and sustained school-level support – are considered (Ahtola et al., 2011; OECD, 2021). Importantly, although several narrative and systematic reviews acknowledge the benefits of transition-supportive practices, the literature also points to substantial methodological heterogeneity across studies, including variability in research designs, the operationalization of transition-related constructs, and the outcome measures employed (Peters, 2010; Vorkapić & LoCasale-Crouch, 2021). This heterogeneity has constrained the development of robust meta-analyses capable of providing comparable effect size estimates, thereby reinforcing the view that transition practices operate primarily as protective and facilitating elements within broader ecological systems, rather than as isolated determinants of long-term educational trajectories (OECD, 2021; Peters, 2010; Rimm-Kaufman & Pianta, 2000).

Considering these findings, schools, preschool educators, and first-grade teachers should prioritize successful transitions, transforming them into opportunities for growth and development (Dunlop & Fabian, 2007).

Teachers' practices to promote successful transition

Previous research on transitions from preschool to primary school has mainly focused on the concept of school readiness. This notion suggests that the success of transitions depends on the child's characteristics and abilities (Bay & Bay, 2020; Noel, 2010). A perspective of educational transitions centered on the concept of school readiness places the responsibility for the transition solely on the child (Dockett & Perry, 2009; Hirst et al., 2011), often overlooking the various contexts in which the child is placed and the interplay between them (Dockett & Perry, 2007, 2022). To gain a deeper understanding of this transitional phase, it is essential to analyze emerging practices in educational settings, as well as the planning and implementation undertaken by preschool and primary school teachers. The literature has highlighted the effectiveness of implementing transition practices between preschool and first grade. Early research on preschool-to-primary transitions focused mainly on children's readiness, attributing success to their traits and abilities (Bay & Bay, 2020; Noel, 2010). This child-centered approach, common in the US, Canada, and Australia, often places adjustment responsibility on the child, overlooking broader ecological and cultural contexts (Dockett & Perry, 2009, 2022). From this perspective, key transition practice includes incorporating social-emotional learning, which enhances children's resilience and adjustment (Besi & Sakellariou, 2019a; Seabra-Santos et al., 2022). International evidence from the US, Ireland, and Indonesia associates these strategies with improved academic and social outcomes (Amanda & Sumanto, 2024; LoCasale-Crouch et al., 2008; Sands & Meadan, 2022).

However, recent studies advocate for a holistic ecological perspective that considers interactions among family, school, and community systems (Abellán, 2019; Castro et al., 2018; OECD, 2021). Supported by international evidence from Finland, Portugal, and Australasia, this framework stresses shared responsibility among stakeholders and the complex, multidimensional nature of transitions (Dunlop & Fabian, 2007; Fernandes, 2023; Pianta & Kraft-Sayre, 2007). Transition practices require collaboration and cooperation among stakeholders, including preschool and first-grade teachers, children, and families (LoCasale-Crouch et al., 2008; Puccioni et al., 2020). In Portugal, the Curricular Guidelines for Preschool Education explicitly adopt this ecological view, promoting collaboration among families, educators, and schools, and emphasizing pedagogical and curricular continuity for children's well-being (Lopes da Silva et al., 2016). Key transition practices from this perspective, including classroom visits, family open days, parent sessions, curricular continuity, and communication between preschool and primary educators, facilitate smoother transitions by reducing anxiety, increasing familiarity, and fostering social competence (Ahtola et al., 2011; Skouteris et al., 2012).

Policy models from Finland and Canada exemplify the advantages of structured, collaborative approaches. Finland's mandatory multi-professional collaboration since 2018 includes educators, health, and social professionals working together to promote holistic development and smooth transitions (Karila & Kupila, 2023; OECD, 2021). Canada's Indigenous Early Learning and Child Care Framework supports culturally grounded, community-driven programs developed with Indigenous partners aimed at facilitating schooling transitions (Employment and Social Development Canada, 2018). These initiatives demonstrate how collaboration and community involvement enhance continuity and transition quality in early childhood education systems.

Recent evidence shows that countries investing in high-quality early childhood education – via aligned curricula and coordinated, professionally led transition practices – achieve greater continuity and better developmental outcomes (OECD, 2021). Scotland's Children and Families Transitions Position Statement exemplifies this, promoting a structured, child-centered approach developed through intersectoral collaboration. It is guided by six principles: aspirations, entitlements, expectations, participation, opportunities, and contribution, and combined with play-based pedagogy to

support well-being and learning (Education Scotland, 2019). This framework highlights how embedding children's rights and voices fosters equitable and inclusive transitions (Dunlop & Fabian, 2007).

Intervention studies reinforce the effectiveness of structured transition programs. The systematic review conducted by Donaldson et al. (2023) demonstrated that integrating parental involvement with classroom-based interventions significantly enhances children's emotional and behavioral adjustment. Collaborative educator practices that align preschool and primary pedagogies enhance learning environments and ease adjustment (Education Scotland, 2019). Family and community involvement reduces transition anxiety and supports sustained engagement (Donaldson et al., 2023; Margetts, 2007).

Teachers' beliefs about transition

Effective preschool-to-primary transition practices require clear and aligned educational goals between preschool and first-grade teachers to ensure curricular coherence and continuous support. Educators' beliefs significantly shape their actions, their interactions with children, and the development of their identities as educators (Casas Deseures et al., 2020; Rietdijk et al., 2018; Xu, 2012). Understanding these beliefs and their implications on pedagogical practices is invaluable for understanding and enhancing educational processes (Xu, 2012). Furthermore, understanding teachers' beliefs has profound implications for educational practices, teacher training, and educational policies and guidelines (Casas Deseures et al., 2020; Rietdijk et al., 2018).

Recent studies from Spain, the Netherlands, Greece, the US, and Portugal highlight notable differences in transition beliefs between preschool and first-grade teachers (Besi & Sakellariou, 2019a, 2019b; Casas Deseures et al., 2020; Correia & Marques-Pinto, 2016; Formosinho et al., 2016; Lane et al., 2004; Rietdijk et al., 2018). In Spain, preschool teachers emphasize emotional security and continuity of care, while primary teachers focus more on school readiness and learning expectation (Casas Deseures et al., 2020). In the Netherlands, preschool teachers prioritize the socio-emotional development and gradual transition, whereas primary school teachers prioritize cognitive skills and autonomy (Rietdijk et al., 2018). Greek studies show that preschool teachers highlight their active role in transition planning, while primary teachers tend to attribute responsibility to families and perceive the process as requiring child adaptation (Besi & Sakellariou, 2019a, 2019b). In the US, there is a clear emphasis by preschool teachers on collaboration and communication with families, while primary teachers often consider readiness as a fixed child characteristic (Lane et al., 2004). In the Portuguese context, studies suggest that preschool teachers consider the transition to primary education as a pivotal phase in a child's life, expressing concerns about their professional roles and the role of educational environments in facilitating successful transitions (Formosinho et al., 2016). In contrast, first-grade teachers see the transition as a natural progression and do not view it as a potential challenge (Formosinho et al., 2016). Preschool teachers appear to recognize that the transition can be influenced by various conditions involving different stakeholders, such as the educational context, teacher actions, family involvement, and the child's characteristics. On the other hand, first-grade teachers prioritize the child's characteristics and family involvement as the primary conditions in the transition process (Correia & Marques-Pinto, 2016). This perspective leads many preschool teachers to prioritize developmental support, while primary school teachers tend to emphasize academic readiness and independence, resulting in differing transition approaches. International studies suggest these contrasts are consistent across diverse educational contexts.

These two professional groups also hold different perspectives on the importance of conditions related to the child. First-grade teachers tend to place value on behavioral regulation skills, as well as autonomy, independence, language proficiency, and academic knowledge as the key competencies that facilitate transition (Besi & Sakellariou, 2019b; Fayeze et al., 2016; Lane et al., 2004, 2009). Conversely, preschool teachers typically emphasize the child's socio-emotional skills, including assertiveness, interpersonal relationships, emotional management, and cooperation (Lane et al., 2004; Lin et al., 2003). Portuguese studies support these trends

but with limited scope (Correia & Marques-Pinto, 2016; Formosinho et al., 2016). Regarding conditions associated with educational contexts, preschool teachers believe that pedagogical and organizational disruptions between the different educational stages pose one of the primary challenges that could hinder the child's successful transition and adjustment (Einarsdóttir, 2006). However, first-grade teachers associate these disruptions with the necessity to adapt teaching practices and adhere to the curriculum requirements of the new school grade (Formosinho et al., 2016).

Contextual and professional circumstances significantly influence teacher beliefs and practices. Sociodemographic characteristics like age, gender, and experience, along with school-related conditions, shape educators' transition approaches (Luján, 2021). Broader structural elements such as policies, family involvement, and socioeconomic context also impact transition environments and teacher expectations (OECD, 2021). Specific attributes – including gender, experience, qualifications, employment sector, and school location – affect how transition challenges are perceived and addressed (Ahtola et al., 2011; Einarsdóttir et al., 2008).

Despite increasing interest, research on teacher beliefs about educational transitions is limited by small-scale, non-representative samples and a lack of systematic links between beliefs and classroom practices (Erkan et al., 2021; Fernandes, 2023; Robayanti & Djoehaeni, 2024). Moreover, demographic and professional characteristics, such as gender, experience, qualifications, sector, and urban/rural context, remain largely underexplored. Although some research exists on Portuguese teachers' perspectives (e.g., Correia & Marques-Pinto, 2016; Formosinho et al., 2016), these studies are limited in scope, often focusing on small or regionally specific samples, and do not systematically examine the influence of multiple sociodemographic and professional variables. Correia and Marques-Pinto (2016) analyzed the relationship between teachers' beliefs and their professional role (preschool vs. first grade), finding significant differences in how transition responsibility was attributed. However, they did not explore other characteristics such as years of experience, qualifications, or geographic context. Formosinho et al. (2016), using a qualitative approach, highlighted teachers' perceptions and practices but did not assess associations with demographic characteristics. As such, broader and more systematic investigations are still needed to understand how these variables may influence beliefs and practices regarding the preschool-to-primary transition. International findings from diverse systems – such as Spain, the Netherlands, Greece, and the U.S.—offer valuable insights into how teachers' sociodemographic and professional characteristics influence their transition beliefs and practices. For example, Besi and Sakellariou (2019a, 2019b), in Greece, found that teachers with more years of experience and higher qualifications were more likely to engage in transition practices focused on cooperation and continuity. Casas Deseures et al. (2020) identified differences in transition beliefs between preschool and primary teachers, influenced by school sector (public vs. private) and professional background. Rietdijk et al. (2018), in the Netherlands, showed that limited inter-level cooperation was associated with differences in school context and teachers' professional roles. Lane et al. (2004), in the U.S., reported that teacher training and school type influenced the extent to which teachers valued family involvement in transitions. These findings suggest that professional characteristics such as years of experience, qualifications, type of school, and professional development opportunities may shape how teachers conceptualize and implement transition practices. Larger, more diverse samples and longitudinal or mixed-method designs are needed to improve validity and generalizability (Besi & Sakellariou, 2019b; Casas Deseures et al., 2020). Addressing these gaps through context-sensitive, ecological research is vital to guide effective teacher training and policies, supporting equitable, high-quality transitions for all children.

These limitations highlight the urgent need for research on preschool and first-grade teachers' beliefs, with a focus on demographic and professional differences. Such insights are essential for developing targeted interventions to improve teacher training and enhance children's transition experiences.

The present study

Given the crucial role of the preschool-to-primary education transition and the pivotal roles of teachers in this process, it is essential to investigate preschool and primary teachers' beliefs and the pedagogical practices they implement, and the conditions influencing them. Differences in their beliefs about the significance of transition and its conditions may hinder successful transitions, turning growth opportunities into stress for children and families. However, most research offers limited insight into how these beliefs develop and connect to practices, often relying on qualitative studies (e.g., Correia & Marques-Pinto, 2016; Einarsdóttir, 2006) or simple statistical methods like univariate regressions or bivariate correlations (e.g., Besi & Sakellariou, 2019a, 2019b; Fayez et al., 2016; Visković & Višnjić-Jevtić, 2020), which do not fully capture the complexity of teachers' beliefs and practices. This study advances the field by examining Portuguese preschool and primary teachers' beliefs and practices concerning the preschool-to-first grade transition, using structural equation modeling (SEM) to analyze multiple belief dimensions and practices simultaneously, while also accounting for measurement error (Hair et al., 2014). Lin et al. (2003) previously employed structural equation modeling (SEM) to examine preschool teachers' beliefs about children's school readiness, considering variations in teachers' training backgrounds and school contexts. Their results showed that readiness expectations were influenced by teachers' gender, age, and the geographic region where they taught. However, the study did not explore other important beliefs related to the transition process, such as the perceived conditions contributing to successful transition. It also did not assess teachers' reported practices or include primary school teachers, thus limiting the generalizability of the findings.

Therefore, the present study aims to build upon existing research by examining Portuguese preschool and primary school teachers' beliefs about children's transition from preschool to the first grade of primary education, as well as an analyze of their related practices. Structural equation modeling (SEM) was employed to estimate the explanatory relationship among multiple dimensions of teachers' transition beliefs and practices, while accounting for measurement errors (Hair et al., 2014). Additionally, the study explores several conditions potentially influencing these beliefs and practices, including teachers' gender, years of teaching experience, qualifications, and the school's sector and geographic location.

Three research questions guided this study:

- (1) What are the key beliefs (facilitating and hindering conditions), perceived difficulties, and reported practices of preschool and primary school teachers regarding children's transition to the first year of primary education?
- (2) Do preschool and primary school teachers differ in their underlying beliefs and practices about children's transition to primary education?
- (3) Is there a relationship among teachers' beliefs regarding children's transition to the first year of primary education, their practices, and their sociodemographic and professional characteristics?

Taken together, the three research questions allow us to address key limitations identified in prior research. RQ1 responds to the predominantly descriptive and often fragmented nature of existing studies by providing a systematic examination of teachers' beliefs, perceived difficulties, and reported practices within a unified analytical framework. By simultaneously considering multiple dimensions (child, family, and school), answers to this question allows for a more comprehensive characterization of the transition process as conceptualized by both teachers and educators. RQ2 addresses the limited empirical evidence comparing preschool educators and primary school teachers, particularly at the latent level, enabling the identification of structural differences while accounting for measurement error. Finally, RQ3 directly tackles the scarcity of research examining how teachers' beliefs and practices are related, and how they are shaped by sociodemographic and professional characteristics. By modeling these relationships within a structural equation framework, the study moves beyond simple bivariate associations, offering a more integrated understanding of the mechanisms underlying teachers' transition-related beliefs and practices.

Methods

Participants

This study was conducted within the context of the Portuguese preschool and primary education system, which includes a mix of public, private nonprofit institutions (mainly under cooperative or religious patronage), and private for-profit schools. In Portugal, preschool education is not mandatory but is widely attended by children aged three to six, while primary education (first four years) is compulsory and begins at age six. Educational transitions between these levels are a key concern for national education policy, particularly under initiatives aiming to promote equity, inclusion, and academic success.

Our target population was all preschool and primary school teachers from private and public schools in Portugal. An invitation to participate in the study was emailed to preschool and primary school principals, who were asked to distribute the online questionnaire to their teaching staff. Two thousand, two hundred and thirty-nine teachers agreed to respond to the survey and complete the questionnaire. A total of 1321 preschool teachers working with children between three and seven years old, with between 0 and 43 years of experience ($M = 25.2$, $SD = 10.1$), and 918 participants teaching in the first cycle of primary education (first four years) with between 0 and 53 years of experience ($M = 23.9$, $SD = 9.9$). [Table 1](#) presents a detailed overview of the participants' characteristics. The sample included teachers from public, private nonprofit, and private for-profit institutions. A comparison with national census data for the academic year of 2019–2020 (Direção-Geral de Estatística da Educação e Ciência [DGEEC], 2021) indicated a similar gender distribution between the study sample and the national population of teachers. However, some discrepancies were observed in variables such as age, qualification, school sector, and geographic location (See Supplementary Material). These differences should be considered when interpreting the results, as they limit the generalizability of findings to the broader population of Portuguese educators.

All procedures strictly adhered to ethical guidelines for research with human participants, including obtaining informed consent, ensuring voluntary participation, maintaining data confidentiality, and respecting participants' rights throughout the study. The research protocol was reviewed and approved by the relevant ethics committee, in full compliance with national and international ethical standards for human subjects' research.

Table 1. Sample characterization.

Variable	Preschool teachers		Primary teachers	
	n	%	N	%
Sex				
Female	1304	98.7	801	87.3
Male	17	1.3	117	12.7
Age				
<30	49	3.7	22	2.4
30–39	179	13.6	80	8.7
40–49	336	25.4	399	43.5
50–59	607	46.0	288	31.4
≥60	150	11.4	129	14.1
Qualifications				
Bachelor	127	9.6	114	12.4
Graduate or post-graduate	961	72.7	716	78.0
Master or PhD	233	17.6	88	9.6
School sector				
Public	903	68.4	805	87.7
Private	418	31.6	113	12.3
School location				
Urban	879	66.5	583	63.5
Rural	442	33.5	335	36.5

Instruments

To assess preschool and primary teachers' beliefs about the transition and adaptation of children to the first grade of primary education, as well as to analyze their practices concerning this transition, we developed the questionnaire "Beliefs and Practices of the Transition of Children from Preschool Education to the First Year of Primary Education." The construction of this questionnaire was based on a comprehensive literature review on the research theme and on the results of a previous qualitative study (Fernandes, 2023).

The structure of the questionnaire was guided by themes emerging from a previous qualitative study involving interviews with 70 teachers (Fernandes, 2023) and anchored by a holistic conceptual model of educational transitions, which conceptualizes transitions as a multidimensional, ecological process involving the child, the family, and the school context (OECD, 2021; Peters, 2010; Rimm-Kaufman & Pianta, 2000). Within each of these ecological dimensions (child, family, and school), specific conditions may operate either as facilitators or as challenges to a successful transition (OECD, 2021; Peters, 2010; Rimm-Kaufman & Pianta, 2000). Thus, rather than organizing the questionnaire strictly by ecological agents (child, family, school), the scales were structured by their functional role in the transition process (facilitating versus hindering conditions),¹ while still explicitly incorporating indicators for each ecological dimension.

The questionnaire began with a summary of the research aims and the guarantee of anonymity and confidentiality of the participant's data. In addition to collecting teachers' sociodemographic characteristics, the questionnaire included six scales intended to collect teachers' beliefs about: 1) child indicators reflecting a successful transition to the first year of primary education, 2) children's feelings of anticipation about their transition to the 1st year, 3) perceived facilitating conditions of the transition process across child-, family-, and school-related dimensions, 4) perceived hindering conditions or challenges associated with the transition process within the same ecological dimensions, 5) difficulties experienced in the transition process, and 6) areas and competencies that are important for promoting children's successful transition (see graphical representation of the scales and respective dimension in the supplementary material). The questionnaire also included a scale about teachers' transition practices, specifically the frequency of implementing activities that promote a successful transition.

Teachers answered these scales using a 10-point Likert scale: an importance scale (1 = Not important at all to 10 = Very important) for teachers' beliefs scales and a frequency scale (1 = Never to 10 = Very frequently) for the teachers' difficulties and teachers' practices scales. In the present study, we did not include the data collected from belief Scales 1, 2, and 6, as the analyses reported in this article focus specifically on teachers' beliefs about transition facilitating and hindering conditions, perceived difficulties, and reported transition practices. The excluded scales addressed complementary aspects of transition beliefs (child indicators of successful transition, children's anticipatory feelings, and areas and competencies for transition) that were not directly aligned with the study's analytical objectives and are therefore not examined in this paper. We describe the scales used in more detail below. Measures' items are reported in full in the supplementary materials.

Sociodemographic characteristics

The first section of the questionnaire collected participants' sociodemographic information, including gender, age, qualifications, years of teaching experience, school sector (private or public), school location (urban or rural), and the number of students in their classrooms.

Facilitating conditions of transition

This section of the questionnaire examined teachers' beliefs about the conditions that facilitate children's transition to the first grade. The term "facilitating conditions" refers to the situations, characteristics, or supports that, in teachers' views, promote a smoother and more successful transition experience. These may include individual child attributes, as well as

contextual and relational conditions that reduce potential challenges and support the child's adjustment to the new educational setting. A total of 16 items were included, grouped into four dimensions: aspects related to children's affective and behavioral characteristics (e.g., the child having the ability to regulate their behavior), aspects associated with children's knowledge (e.g., the child entering school with reading and writing skills), conditions related to the family context (e.g., a positive relationship between school and family), and conditions linked to the school context (e.g., the existence of coordination between preschool education and the first cycle of basic education). These items aimed to assess the relative importance attributed by teachers to different domains that contribute to facilitating the child's transition. Additionally, the use of this terminology reflects an understanding that schools and educators play a central role in promoting practices that support and ease the transition process for children.

Hindering conditions of transition

This scale analyzed the stress conditions involved in children's transition from preschool to the first grade of primary education. The term "hindering conditions" refers to challenges that teachers perceive as potentially stressing or complicating the transition process. These hindering conditions reflect characteristics or contextual circumstances that may increase the emotional, cognitive, or behavioral demands placed on children during this period of change. The scale comprised 16 items, covering four distinct areas: hindering conditions inherent to children's affective and behavioral characteristics (e.g., the child experiencing difficulties in emotional regulation), hindering conditions related to children's knowledge (e.g., the child having limited reading and writing skills upon entry to the first grade), hindering conditions associated with the school context (e.g., discontinuity in pedagogical activities and practices), and hindering conditions linked to the family context (e.g., anxious or overprotective family attitudes). These items were designed to assess the various sources of stress that may affect children's adjustment during the transition process, recognizing that schools and educators also play a crucial role in identifying, addressing, and mitigating these stressors through targeted practices and support strategies.

Difficulties during transition activities

Four items were used to examine the difficulties experienced by teachers in their professional activities related to the transition of children from preschool to the first grade. Two items focused on challenges in planning, organizing, and implementing a successful transition process (e.g., experiencing difficulties in planning and developing transition activities). The other two addressed challenges in collaborating and coordinating practices with preschool and primary education departments (e.g., experiencing difficulties in developing articulation activities aimed at ensuring continuity between preschool and the first cycle of basic education). Additionally, an open-ended question was included to allow teachers to report additional difficulties encountered during the transition process.

Transition practices

The final section aimed to identify the activities undertaken by preschool and primary school teachers to facilitate a smooth and successful transition from preschool to the first grade. The section encompassed a range of actions and activities within the context of the transition's framework. It included activities directly involving children (e.g., initiating a dialogue with the child to foster a better understanding of the characteristics and rules of the first grade), activities engaging children's *families* (e.g., seeking to involve families in transition-related activities), as well as coordination efforts between preschool and primary education departments or educational centers (e.g., developing joint activities involving preschool and first-grade children).

Data analysis

We conducted four confirmatory factor analyses (CFAs) to confirm the structural validity of the grouping of items in each of our four scales, using Mplus 8.6. We used the robust maximum likelihood (MLR) estimator. Each model fit was assessed using the following indices and minimum criterion for an acceptable level of fit: chi-square (χ^2) small (relative to the degree of freedom) or non-significant p -value; comparative fit index (CFI) and Tucker-Lewis index (TLI) higher than .90; and root mean square error of approximation (RMSEA) and standardized root mean residual (SRMR) lower than .08 (Wang & Wang, 2019). Factor weights and individual reliability of the items determined the quality of the local adjustment of the model. Modification indices (MI) were used to guide model improvements of relationships that can theoretically be justified. The goodness-of-fit of all the measures' final models is reported in Table 2, confirming the structural validity of the measures. The graphical representations of the four CFA models tested, including all items, factor loadings, and correlations between dimensions, are available in the supplementary material.

We used McDonald's omega (ω) and an index of construct replicability (H) to assess the reliability of the factors, following the approach described by Morin et al. (2020). Values close to or higher than .70 were considered adequate, indicating convergent validity and internal consistency. Values between .60 and .70 were considered acceptable if other indicators of the model's construct validity were good (Hair et al., 2014). We calculated the average variance extracted (AVE), which should be .50 or greater to suggest adequate convergent validity. If AVE were less than .50, but standardized factor loadings of all items were not less than .50, the construct's convergent validity was still considered adequate (Cheung & Wang, 2017). AVE estimates for two factors should also be greater than the maximum shared variance (MSV), and the square root of the AVE ($\sqrt{\text{AVE}}$) should be greater than the correlation between the two factors to provide evidence of discriminant validity (Morin et al., 2020). The indices of reliability, convergent validity, and discriminant validity shown in Table 3 demonstrate that the measures are both reliable and valid.

After validating the scales through confirmatory factor analysis and confirming the reliability of the measures, the total score of each dimension was calculated (mean of the items). A descriptive analysis of the collected data was performed, and measures of central tendency (mean) and dispersion (minimum, maximum, and standard deviation) were calculated to have a general overview of preschool and primary school teachers' key beliefs, perceived difficulties, and reported practices regarding children's transition to the first year of primary education (Question 1). To gain a deeper understanding of how these elements vary in importance and frequency within each group, we used a repeated measures ANOVA to identify the conditions considered most important by each group of teachers, as well as their major difficulties and the activities most frequently used in their practices. The ANOVA was appropriate because it allowed us to compare multiple related dependent variables (e.g., different conditions, difficulties, and practices) within the same subjects, accounting for within-subject correlations, increasing statistical power, and controlling for individual variability.

To test the extent to which preschool and primary school teachers differ in their underlying beliefs and practices about children's transition to primary education (Question 2), we compare mean values using a structural equation modeling (SEM) approach. The SEM approach allowed us to test broader

Table 2. Goodness of fit indices for the measure models.

Measures	χ^2			CFI	TLI	RMSEA		SRMR
	Value	df	p			Value	CI 90%	
Facilitating	422.18	96	<.001	.975	.969	.039	[.035043]	.999
Hindering	466.80	96	<.001	.974	.968	.042	[.038045]	.999
Difficulties	4.44	1	.035	.999	.991	.039	[.008079]	.602
Practices	26.21	5	<.001	.989	.966	.044	[.028061]	.711

Note. MI = Modification Indices; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval; SRMR = standardized root mean residual.

Table 3. Indices of reliability, convergent, and discriminant validity of the measure models.

Measures and Dimensions	N. of items	ω	H	AVE	$\sqrt{\text{AVE}}$	MSV	Higher correlation
Facilitating Conditions							
Affective and Behavioral	6	.90	.90	.60	.78	.52	.72
Knowledge	3	.98	.98	.93	.96	.07	.27
Family	5	.85	.87	.53	.73	.58	.76
School	2	.79	.79	.65	.81	.58	.76
Hindering Conditions							
Affective and Behavioral	5	.90	.92	.64	.80	.26	.51
Knowledge	3	.97	.98	.93	.96	.16	.40
Family	4	.90	.91	.68	.83	.26	.51
School	4	.80	.81	.50	.71	.24	.49
Difficulties							
Transition process	2	.81	.82	.68	.82	.39	.62
Articulation	2	.96	.97	.93	.97	.39	.62
Transition practices							
Articulation	2	.85	.87	.74	.86	.17	.41
Child	2	.78	.78	.64	.80	.54	.74
Family	2	.78	.79	.64	.80	.54	.74

Note. ω = McDonald's omega; H = Construct replicability; AVE = average variance extracted; SQRT = Square root; MSV = maximum shared variance.

latent constructs (e.g., beliefs, difficulties, and practices) while accounting for measurement error, ensuring more valid and reliable group comparisons (Hair et al., 2014). First, to ensure the validity of group comparison, we tested the instruments' measurement invariance and confirm that all measures assessed the same construct in our comparison groups. We used the procedures described by Wang and Wang (2019), analyzing configural (same CFA model for the groups), metric (configural plus same pattern/factor loading for the groups), and scalar invariance (metric plus same item intercepts for the groups). Each model fit was assessed using the same indices and minimum criteria for an acceptable level of fit used in the confirmatory factor analysis. Invariance was examined with the chi-square difference test ($\Delta\chi^2$), changes in CFI (ΔCFI) and TLI (ΔTLI), and changes in RMSEA (ΔRMSEA) and SRMR (ΔSRMR) when compared to the previous model. In this regard, a significant result in the chi-square difference test combined with values of ΔCFI or $\Delta\text{TLI} \leq -.01$, supplemented by values of $\Delta\text{RMSEA} \geq .015$ or $\Delta\text{SRMR} \geq .030$ when testing metric (loading) invariance and $\Delta\text{SRMR} \geq .010$ when testing scalar (intercept invariance) were indicative of non-invariance (Wang & Wang, 2019).

Once the instruments' measurement invariance was confirmed, we tested the latent mean differences between our comparison groups, following the procedure presented by Wang and Wang (2019). We tested model invariance at the factor means level by constraining all means to zero. If there were non-invariance at the means level compared to the unconstrained scalar model, we concluded that a significant difference existed between the means of the groups. MI and estimates' *p*-values were used to identify the group differences.

To understand how teachers' beliefs and practices regarding children's transition to the first year of primary education are related to one another and to their sociodemographic and professional characteristics (Question 3), we employed structural equation modeling (SEM). This approach was particularly appropriate due to the complexity of the relationships under investigation. Specifically, SEM allows for the simultaneous estimation of multiple dependent relationships – such as the influence of sociodemographic and professional variables on both beliefs and practices, as well as the predictive role of beliefs on practices. Moreover, SEM accounts for measurement error by modeling latent constructs (e.g., beliefs and practices) based on multiple observed indicators, thereby increasing the reliability and validity of the results (Hair et al., 2014).

In the theoretical model test, all dimensions of teachers' beliefs about the conditions and difficulties regarding children's transition and adaptation to the first year of primary education were specified as predictors of the three dimensions of the teachers' transition practices scale. We also included as predictors of both teachers' beliefs, difficulties and practices their professional and sociodemographic

characteristics: gender (0 = female; 1 = male), years of teaching experience, qualifications (1 = bachelor's degree; 2 = graduate or post-graduate degree; 3 = master's or doctorate's degree), school sector (0 = public; 1 = private), and school location (0 = urban; 1 = rural). Consistent with SEM modeling conventions (Hair et al., 2014), correlations were freely estimated among exogenous (predictor) and endogenous (outcome) variables. As described earlier, model fit indices (χ^2 , CFI, TLI, RMSEA, and SRMR) were used to assess the theoretical model.

Results

Teachers' beliefs and practices about children's transition to first grade

Table 4 presents the descriptive statistics of teachers' beliefs, perceived difficulties, and reported practices regarding children's transition to the first year of primary education. To understand how these beliefs and practices vary in importance and frequency within each group of teachers (Question 1), we conducted a series of repeated-measures ANOVAs. These F-tests aimed to examine whether teachers attributed significantly different levels of importance to the various domains assessed within each scale (e.g., child, family, and school context dimensions) and whether these patterns were consistent across groups.

In terms of facilitating conditions, both groups of teachers considered children's knowledge less important as a facilitator condition of a successful transition to the first year of schooling, particularly among primary teachers ($M = 5.9$) compared to preschool teachers ($M = 7.3$). In comparison, children's affective and behavioral characteristics and the family and school context were considered more important for both groups of teachers (means ranging between 9.1 and 9.5). These differences were statistically significant, confirmed by the ANOVA results: for preschool teachers – $F(1.53, 2014.43) = 1340.78$, $p < .001$, $\eta_p^2 = .50$; and for primary teachers – $F(1.48, 1360.26) = 1574.77$, $p < .001$, $\eta_p^2 = .63$.

Regarding hindering conditions, both groups of teachers consistently identified the child's affective and behavioral characteristics ($M = 8.4$ for preschool teachers; $M = 8.5$ for primary teachers) and family-related aspects ($M = 9.0$; $M = 8.9$, respectively) as the most significant hindering conditions during the transition period. In contrast, knowledge-related ($M = 6.8$; $M = 5.9$) and school-related stressors ($M = 7.9$; $M = 7.1$) were considered significantly less relevant. These findings were confirmed by the repeated-measures ANOVAs: for preschool teachers – $F(2.34, 3082.69) = 767.88$, $p < .001$, $\eta_p^2 = .37$; and for primary teachers – $F(2.31, 2120.59) = 802.23$, $p < .001$, $\eta_p^2 = .47$.

Table 4. Descriptive characteristics of teachers' beliefs, difficulties and practices.

Measures and Dimensions	Preschool teachers			Primary teachers		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Facilitating Conditions						
Affective and Behavioral	9.2	0.9	4–10	9.1	1.0	2–10
Knowledge	7.3	1.9	1–10	5.9	2.3	1–10
Family	9.5	0.7	4–10	9.3	0.8	5–10
School	9.3	0.9	4–10	9.1	1.1	1–10
Hindering Conditions						
Affective and behavioral	8.4	1.4	1–10	8.5	1.4	2–10
Knowledge	6.8	2.0	1–10	5.9	2.3	1–10
Family	9.0	1.2	1–10	8.9	1.2	2–10
School	7.9	1.4	1–10	7.1	1.7	1–10
Difficulties						
Transition process	4.6	2.4	1–10	4.1	2.3	1–10
Articulation	5.1	2.9	1–10	3.6	2.6	1–10
Transition practices						
Child	9.1	1.1	1–10	9.4	0.9	2–10
Articulation	7.6	2.7	1–10	8.8	1.7	1–10
Family	9.0	1.3	1–10	9.1	1.1	2–10

As for perceived difficulties, preschool teachers reported significantly greater challenges in articulating with primary school teachers compared to handling the transition process ($M = 5.1$ in articulation vs. $M = 4.6$ in transition process) – $F(1,1320) = 51.19, p < .001, \eta_p^2 = .04$. On the contrary, primary teachers reported experiencing more difficulty managing the transition process itself than articulating with preschool teachers ($M = 4.1$ transition process vs. $M = 3.6$ in articulation) – $F(1, 917) = 57.19, p < .001, \eta_p^2 = .06$.

Finally, regarding transition practices, both groups of teachers reported engaging significantly more frequently in activities focused on the child ($M = 9.1$ for preschool teachers and $M = 9.4$ for primary teachers) and the family ($M = 9.0$ for preschool teachers and $M = 9.1$ for primary teachers) than in those aimed at promoting articulation between levels ($M = 7.6$ for preschool teachers and $M = 8.8$ for primary teachers). The differences are statistically significant – $F(1.31, 1732.38) = 341.10, p < .001, \eta_p^2 = .21$ for preschool teachers; $F(1.45, 1325.78) = 95.07, p < .001, \eta_p^2 = .09$ for primary teachers – but the difference was larger for preschool teachers, who reported less frequent articulation practices ($M = 7.6$) than primary teachers ($M = 8.8$).

These findings help clarify what conditions teachers considered more important, in what areas they feel have more difficulties, and the practices they use more frequently, directly addressing the first research question.

Differences between preschool and primary teachers

We compared the latent mean values of beliefs, perceived difficulties, and reported practices between preschool and primary teachers using structural equation modeling (SEM) to understand the extent to which they differ (Question 2). Except for the transition practices scale, all other scales demonstrated measurement invariance, confirming that they assessed the same constructs across both groups (see Table 5). The analysis revealed significant differences between the two groups regarding the importance they assign to conditions facilitating and hindering the transition to first grade. As indicated in Table 5, constraining the latent means across groups resulted in a significant decrease in model fit, suggesting that the groups held divergent perspectives. Specifically, primary teachers reported lower importance than preschool teachers to facilitating conditions related to the child's knowledge ($\Delta\text{Mean} = -1.45, p < .001$), family context ($\Delta\text{Mean} = -0.15, p < .001$), and school context ($\Delta\text{Mean} = -0.27, p < .001$). Similarly, primary teachers perceived lower hindering conditions related to the child's knowledge ($\Delta\text{Mean} = -0.84, p < .001$), family ($\Delta\text{Mean} = -0.11, p < .001$), and school context ($\Delta\text{Mean} = -0.75, p < .001$).

Regarding difficulties during the transition, we also identified differences in the means between the groups. Primary teachers reported experiencing fewer challenges in managing the transition process ($\Delta\text{Mean} = -0.53, p < .001$) and in coordinating with preschool teachers ($\Delta\text{Mean} = -1.57, p < .001$) when compared to preschool teachers.

Concerning transition practices, full scalar invariance was not achieved. The analyses supported configural invariance, indicating that the factor structure was equivalent across groups. Chi-square difference test for metric invariance was significant and the SRMR change slightly exceeded the recommended threshold ($\Delta\text{SRMR} = .035$). Still, changes in incremental fit indices were near to the acceptable limits (ΔCFI and $\Delta\text{TLI} > -.01$), providing close to acceptable evidence of metric invariance. However, the model fit indices of the scalar invariance model revealed that some item intercepts varied significantly between groups (ΔCFI and $\Delta\text{TLI} \leq -.01, \Delta\text{RMSEA} \geq .015$, and $\text{SRMR} \geq .030$), prompting an examination of modification indices. Items 3 and 5 displayed the highest intercept non-invariance. The analysis of these items revealed that primary teachers reported less frequent participation in articulation meetings with preschool educators to collect individualized information about children (item 3; $\text{Mean} = 7.5$) compared to preschool teachers ($\text{Mean} = 8.1$) but revealed more frequent involvement of families in transition-related activities (item 5; $\text{Mean} = 9.0$ vs. 8.7).

Following Dimitrov's (2010) guidelines, the model was adjusted by freeing the intercepts of items 3 and 5. This led to an improved model fit and supported partial intercept invariance. Although the metric invariance model showed borderline changes in some fit indices, the partial scalar invariance

Table 5. Invariance analysis for preschool and primary teachers.

Instrument	Invariance Model	χ^2	df	p	RMSEA	CFI	TLI	SRMR	$\Delta\chi^2$	df	p	Δ RMSEA	Δ CFI	Δ TLI	Δ SRMR
Facilitating conditions	Configural	585.73	192	<.001	.043	.972	.965	.034							
	Metric	609.01	204	<.001	.042	.971	.966	.043	23.28	12	.025	-.001	-.001	.001	.009
	Scalar	697.26	216	<.001	.045	.966	.962	.048	88.25	12	<.001	.003	-.005	-.004	.005
	Mean	870.36	219	<.001	.052	.954	.950	.065	173.1	3	<.001	.007	-.012	-.012	.017
Hindering conditions	Configural	593.99	192	<.001	.043	.973	.966	.042	—	—	—	—	—	—	—
	Metric	612.29	204	<.001	.042	.972	.967	.047	18.3	12	.107	-.001	-.001	.001	.005
	Scalar	689.53	216	<.001	.044	.968	.964	.052	77.24	12	<.001	.002	-.004	-.003	.005
	Mean	839.34	220	<.001	.050	.958	.954	.065	149.81	4	<.001	.006	-.010	-.010	.013
Difficulties	Configural	9.355	2	.009	.057	.999	.993	.003	—	—	—	—	—	—	—
	Metric	12.35	4	.015	.043	.999	.996	.007	3.00	2	.224	-.014	.000	.003	.004
	Scalar	14.87	6	.021	.036	.999	.997	.008	2.52	2	.284	-.007	.000	.001	.001
	Mean	196.01	8	<.001	.145	.971	.957	.113	181.14	2	<.001	.109	-.028	-.040	.105
Transition practices	Configural	31.05	10	.001	.043	.990	.970	.018	—	—	—	—	—	—	—
	Metric	49.13	13	<.001	.050	.983	.960	.053	18.08	3	<.001	.007	-.007	-.010	.035
	Scalar	94.12	16	<.001	.066	.963	.931	.073	44.99	3	<.001	.016	-.020	-.029	.020
	Scalar ^a	51.36	14	<.001	.049	.982	.962	.053	2.23	1	.135	-.001	-.001	.002	.000
	Mean	231.95	17	<.001	.106	.898	.820	.110	180.59	3	<.001	.057	-.084	-.142	.057

Note. In the configural model, the same Confirmatory Factor Analysis model was fixed for both groups. In the Metric model, factor loadings were fixed equally for both groups. In the scalar models, factor loadings and item intercepts were fixed equally for both groups. Differences in the model's fit indicators of non-invariance are in bold.

^aPartial Scalar – Intercepts of items 3 and 5 of the transition practices scale freely estimated for kindergarten and primary teachers.

model did not require freeing any factor loadings to achieve a model fit comparable to the configural solution, supporting the stability of the measurement structure across groups.

Proceeding with this partial invariance model, we examined latent mean differences and found that primary teachers reported significantly higher engagement in child-focused practices ($\Delta\text{Mean} = 0.38$, $\text{SE} = 0.04$, $p < .001$) and articulation activities ($\Delta\text{Mean} = 1.47$, $\text{SE} = 0.14$, $p < .001$) than their preschool counterparts.

Taken together, these findings demonstrate that preschool and primary teachers differ significantly in their beliefs, perceived difficulties, and practices related to the transition process. While primary teachers attribute lesser importance to child-related and contextual conditions as facilitating or hindering transition, they also report experiencing fewer difficulties in managing the transition and coordinating with preschool staff. Despite their lower participation in certain articulation practices, such as meetings with preschool educators, they report more frequent engagement in transition practices focused on children and cross-level communication.

Relationship between teachers' characteristics, transition beliefs and practices

To address the third research question about how teachers' beliefs and practices are related to each other and interact with their sociodemographic and professional characteristics, we employed structural equation modeling (SEM) to test a theoretical model which teachers' beliefs and perceived difficulties about the children's transition to the first grade served as predictors of the three dimensions of transition practices. We also included teachers' sociodemographic and professional characteristics as additional predictors of their beliefs and practices.

At first, we did not include teachers' educational levels (preschool and primary school) in the test the model, to examine whether the theoretical model worked similarly across both groups. Using multi-group analysis, we tested the model's configural, metric, scalar, and structural invariance, following the procedures outlined by Wang and Wang's (2019). The initial configural model showed good fit indices for both groups: $\chi^2(1784) = 4370.84$, $p < .001$; $\text{RMSEA} = .036$, $\text{IC90\%} = [.035037]$, $p = .999$; $\text{CFI} = .951$, $\text{TLI} = .944$; $\text{SRMR} = .046$, indicating that the model's factor structure was consistent for both preschool and primary teachers.

Next, we tested whether the relationship (paths) between beliefs, difficulties, and practices were the same across groups. The structurally constrained model, with fixed paths to be equal, did not worsen fit significantly: $\Delta\chi^2(42) = 204.16$, $p < .001$, $\Delta\text{RMSEA} = .001$, $\Delta\text{CFI} = -.004$, $\Delta\text{TLI} = -.004$, $\Delta\text{SRMR} = .005$, meaning the model's causal structure applies similarly to both groups. Therefore, teachers' educational level did not moderate the relationship in the model.

After confirming this, we included educational level as predictor of teachers' beliefs and practices. This model also showed good fit: $\chi^2(894) = 3256.06$, $p < .001$; $\text{RMSEA} = .034$, $\text{IC90\%} = [.033036]$, $p = .999$; $\text{CFI} = .955$, $\text{TLI} = .946$; $\text{SRMR} = .036$. To simplify the model, we removed all non-significant paths that did not affect fit or predictive power. Therefore, some paths that were marginally significant were retained when their removal resulted in reductions in predictive accuracy or explained variance. The final, more parsimonious model still fit well: $\chi^2(863) = 3191.56$, $p < .001$; $\text{RMSEA} = .035$, $\text{IC90\%} = [.033036]$, $p = .999$; $\text{CFI} = .955$, $\text{TLI} = .948$; $\text{SRMR} = .037$.

Figure 1 presents the strongest predictors of transition practices (with standardized coefficients $\beta > .10$). All estimates are reported in Table 6. Covariates between predictors and between outcomes are presented in the supplementary materials. The complete Mplus output for both the fully specified model and the more parsimonious model is available in the supplementary materials.

The results showed that teachers engaged more frequently in transition activities related to articulation between preschool and primary education departments when they reported fewer difficulties in implementing articulation activities, but paradoxically, more difficulties in planning and organizing the overall transition process. These two components emerged as the strongest predictors of articulation practices. Additionally, teachers who attributed greater importance to the school context as both a facilitating and hindering conditions, as well as those who viewed children's

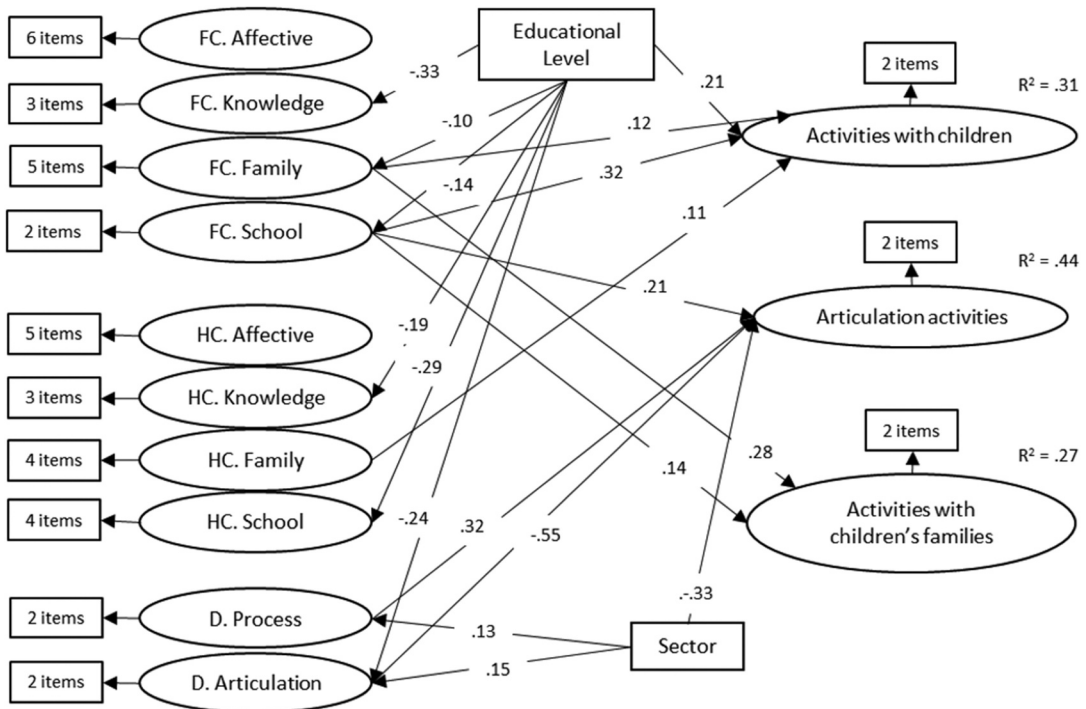


Figure 1. Structural equation modeling results of the relationship between beliefs, practices and teachers' characteristics. *Note.* $N = 2238$. FC = Facilitating conditions of transition; HC = Hindering conditions of transition; D = Difficulties during transition activities. Only significant estimates $> .10$ of practices' predictors are presented. Relationships between independent variables are not presented. Estimator: robust maximum likelihood (MLR).

knowledge as a hindering condition, also reported higher engagement in articulation activities. Teachers working in public schools, primary education teachers, and those with greater teaching experience reported carrying out more articulation practices compared to their counterparts in private schools, preschool teachers, and less experienced teachers. Although the effect of teaching experience was statistically significant, its magnitude was small. Collectively, these variables explained 43.6% of the variance in teachers' articulation practices.

Regarding transition activities focused on the children, teachers reported implementing more of these practices when they placed stronger emphasis on the school context as a facilitator, this being the most robust predictor for child-focused activities. They also reported implementing more child-focused activities when they considered children's affective and behavioral characteristics, as well as their knowledge, as facilitators, and when they recognized family context conditions as both facilitating and hindering transition. Furthermore, teachers who reported fewer difficulties in planning and organizing the transition process and articulating between educational levels, were more likely to use child-centered transition practices. Together, these predictors accounted for 30.6% of the variance in child-focused transition activities.

In terms of family-focused transition activities, teachers who emphasized the importance of both family and school context as facilitating and hindering conditions reported fewer difficulties in planning and organizing the transition, and those who worked in public schools tended to engage more frequently in family-focused practices. These aspects explained 27.4% of the variance in family-focused transition activities.

Finally, the results revealed that teachers in private schools reported greater difficulties both in managing the transition process and in articulating with the preschool and primary school department compared to teachers working in public schools.

Table 6. Estimates of the structural equation modeling results of the relationship between beliefs, practices and teachers' characteristics.

Effects	b	SE	β	p
Articulation activities ←				
School (FC)	0.474	.064	.204	<.001
Knowledge (HC)	0.033	.020	.035	.090
School (HC)	0.114	.050	.067	.021
Transition process (D)	0.307	.033	.317	<.001
Articulation (D)	−0.405	.026	−.553	<.001
Sector	−1.612	.133	−.328	<.001
Experience	0.011	.004	.055	.009
Educational level	0.390	.077	.092	<.001
Child focus activities ←				
Family (FC)	0.155	.078	.118	.048
School (FC)	0.339	.066	.321	<.001
Affective & behavioral (HC)	0.050	.027	.067	.061
Knowledge (HC)	0.024	.011	.055	.030
Family (HC)	0.103	.033	.112	.001
Transition process (D)	−0.030	.014	−.068	.035
Articulation (D)	−0.023	.010	−.070	.022
Teachers' Educational level	0.407	.040	.210	<.001
Family focus activities ←				
Family (FC)	0.443	.088	.283	<.001
School (FC)	0.180	.076	.144	.016
Affective and Behavioral (HC)	0.057	.027	.065	.032
Family (HC)	0.082	.038	.075	.030
School (HC)	0.068	.032	.074	.032
Transition process (D)	−0.041	.016	−.076	.014
Articulation (D)	−0.022	.011	−.055	.049
Sector	−0.167	.058	−.063	.003
Transition process (D) ←				
Sector	0.650	.120	.128	<.001
Teachers educational level	−0.409	.104	−.093	<.001
Articulation (D) ←				
Sector	1.017	.149	.152	<.001
Teachers educational level	−1.389	.120	−.239	<.001
Knowledge (FC) ←				
Teachers educational level	−1.455	.092	−.332	<.001
Family (FC) ←				
Teachers educational level	−0.150	.034	−.102	.001
School (FC) ←				
Teachers educational level	−0.262	.045	−.143	<.001
Knowledge (HC) ←				
Teachers educational level	−0.841	.096	−.187	<.001
Family (HC) ←				
Teachers educational level	−0.111	.048	−.053	.027
School (HC) ←				
Teachers educational level	−0.727	.069	−.289	<.001

Note. FC = Facilitating conditions; HC = Hindering conditions; D = Difficulties.

Discussion

The study aimed to explore preschool and primary teachers' beliefs about children's transition from preschool to first grade and to analyze the relationship between these beliefs and the practices they implemented to support children's transition.

Teachers' beliefs and practices about children's transition to first grade

We aimed to identify the key beliefs, perceived difficulties, and reported practices of preschool and primary school teachers regarding children's transition to the first year of primary education, and how these elements vary in importance and frequency within each group (Question 1).

Overall, the findings reveal a strong convergence between preschool and primary teachers' perspectives, with both groups attributing very high importance to multiple elements involved in the transition. According to the questionnaire results, both preschool and primary teachers considered elements associated with children affective and behavioral characteristics, the family's role during the transition, and the school contexts and professionals as key facilitators, classifying them as "very important" (with values close to 10). This pattern suggests a shared, multidimensional understanding of transition, rather than a narrow focus on isolated domains.

These results suggest that Portuguese educators adopt a holistic view of children's transition, recognizing the interrelation of various contexts in the transition process (Dunlop & Fabian, 2007; Fernandes, 2024; Pianta et al., 1999). Such findings are consistent with ecological perspectives that conceptualize transition as embedded within interconnected child, family, and school systems.

Both preschool and primary teachers perceived children's affective, motivational, and relational characteristics as important transition facilitators. They believe that children who are motivated to learn, can regulate their behavior and emotions, and establish positive relationships with peers and adults, are more likely to experience a smoother transition. Effectively, the literature has highlighted the importance of the child's affective, motivational, and relational aspects, especially feelings of well-being, trust, and security, as essential facilitators in the transition process (e.g., Besi & Sakellariou, 2019b; Dockett & Perry, 2022).

On the other hand, the teachers attributed comparatively less importance to elements associated with children's knowledge in reading, writing, mathematics, and world knowledge. Although not disregarding academic competencies, these professionals appear to prioritize socio-emotional readiness over early academic skills. This finding is supported by statistically significant lower mean scores on the knowledge-related items in the beliefs dimension. These results converge with findings from other studies (Besi & Sakellariou, 2019a; Lin et al., 2003; Niklas et al., 2018), which also report that teachers tend to emphasize social and behavioral readiness over formal academic preparation. Taken together, these findings reinforce the view that teachers conceptualize successful transition primarily in relational and emotional terms, rather than as an early academic milestone.

We also aimed to identify which conditions teachers considered hindering children's transition. The results indicated that preschool and primary teachers agree on the relative importance of the different conditions, considering the child's affective and behavioral characteristics and the family context more important than the child's knowledge and learning characteristics and the school context. This pattern mirrors the hierarchy observed in the facilitators' dimension, reinforcing the centrality attributed to child-related and family-related factors in teachers' representations of transition.

Discontinuities in the pedagogical practices between preschool and first grade, as well as differences in school organization and the physical environment, are highlighted in the literature as possible obstacles in the transition process (e.g., Cassidy, 2010; Castro et al., 2012; Chan, 2012). However, items related to these aspects received lower ratings in our data, indicating that school context elements were relatively undervalued by Portuguese teachers, particularly primary teachers. This relative devaluation of contextual and structural discontinuities is noteworthy, as it may suggest a tendency to conceptualize transition difficulties primarily as residing within the child or family, rather than within institutional arrangements. Such a perspective risks obscuring the role of systemic and organizational factors that the literature consistently identifies as influential in children's adjustment.

Regarding the practices implemented to support transition (as measured by the teachers' self-reported frequency of engagement in predefined activities grouped by focus – family, child, or articulation – in the questionnaire), both preschool and primary teachers recognized the importance of working with the family, mentioning the implementation of frequent activities to promote the dialogue with families and their involvement in transition or reception activities. These activities included, for example, individual meetings with families, open-door days, and welcoming sessions.

The importance of family participation and involvement has been well evidenced in some investigations, demonstrating that when there are consistent practices of involvement and development of

partnerships between school and family, families feel that their participation is valued, resulting in benefits in the transition process (e.g., Mata et al., 2022; Puccioni et al., 2020). Our findings, therefore, align with previous research highlighting family – school partnerships as a protective element during transition (e.g., Puccioni et al., 2020; Tobin et al., 2022). However, it is important to note that the emphasis on family-oriented practices may also reflect an implicit distribution of responsibilities in which schools position families – and, indirectly, children – as primary agents of adaptation.

Professionals also reported a high frequency of engagement in activities related to discussions with children about the primary school, its new operating rules, and their new responsibilities (child-focused practices). These preparatory conversations appear to function as anticipatory socialization mechanisms, helping children construct expectations about the new educational context. Such dialogue with children can help overcome possible feelings of fear and anxiety about the new, unknown context, in addition to promoting a greater sense of security during the transition (e.g., Lopes da Silva et al., 2016; Perry & Dockett, 2011; Visković, 2018).

Children's knowledge of the new physical spaces of primary school is essential for their transition and adapting to this new stage. Preschool and primary teachers in this study mentioned that they frequently conduct activities that involve preschool children's visits to first-grade classrooms and other school spaces. Preschool and primary teachers in this study mentioned that they frequently conduct activities that involve preschool children's visits to first-grade classrooms and other school spaces (child-focuses practices). Knowledge of these spaces provides children with a better understanding of the functioning and organization of the new cycle, which, in turn, promotes greater confidence about the transition (e.g., Lopes da Silva et al., 2016; Marin et al., 2021; Perry & Dockett, 2011; Visković, 2018).

Activities involving coordination between preschool and primary education departments, whether through joint activities or meetings to plan and implement transition activities, were mentioned less frequently by both groups of teachers. More specifically, articulation practices – such as joint planning meetings or collaboratively implemented transition activities – were reported less frequently than family- or child-focused strategies. This reduced emphasis on interprofessional coordination may suggest that transition is not yet fully conceptualized as a shared institutional responsibility between preschool and primary education. Instead, teachers appear to concentrate predominantly on actions developed within their own educational setting (Fernandes, 2023; Formosinho et al., 2016).

When analyzing the difficulties experienced by teachers in their pedagogical activity within the scope of educational transitions, it was observed that both groups of professionals rarely mentioned difficulties in this area. However, based on their responses to the “transition difficulties” scale, preschool teachers reported more challenges related to establishing articulation practices with the primary school, particularly concerning planning and implementing activities joint transition activities. On the other hand, primary teachers' main difficulties were associated with welcoming children with conditional enrollment or clinical problems. They express concern about these children's ability to adapt and access learning, highlighting the need for differentiated support and individualized teaching strategies.

This pattern of results further reinforces the possibility of a differentiated perception of roles: preschool teachers seem to experience transition primarily as a challenge of inter-level coordination, whereas primary teachers frame their difficulties mainly in terms of responding to children's individual characteristics. Such findings may point to an implicit imbalance of responsibilities, in which early childhood educators perceive themselves as primarily responsible for preparing children, while primary teachers position adaptation as contingent upon children's readiness and specific needs.

Taken together, these findings indicate that teachers predominantly prioritize relational, informational, and family-oriented strategies, while placing comparatively less emphasis on structural alignment and interprofessional coordination. While such relational strategies are strongly supported in the literature (e.g., Dunlop & Fabian, 2007; Mata et al., 2022; Perry & Dockett, 2011), the limited investment in articulation practices reflects ongoing challenges in achieving institutional continuity between preschool and primary education (Cassidy, 2010; Castro et al., 2012; Chan, 2012).

Moreover, the modest associations observed between beliefs and reported practices suggest that holding a holistic understanding of transition does not automatically translate into coordinated or systemic action. Beliefs and practices appear to be connected, yet only moderately aligned, reinforcing the view of transition as a complex, contextually mediated process shaped by structural conditions as much as by individual convictions (Dunlop & Fabian, 2007; Pianta et al., 1999).

Differences between preschool and primary teachers

The present study also aimed to understand the extent to which preschool and primary school teachers differ in their underlying beliefs and practices about children's transition to primary education (Question 2). Overall, the findings indicate more convergence than divergence between the two professional groups. Both preschool and primary teachers shared similar perspectives regarding the relative importance of elements influencing the transition process, whether as facilitators or as sources of stress. However, some differences emerged in the mean scores attributed to each dimension, with primary school teachers assigning slightly lower importance to most elements that were similarly valued by both groups. Although these differences were not substantial, they suggest a tendency for primary teachers to adopt a comparatively less problematized view of transition. This finding aligns with previous research in Portuguese contexts, indicating that primary teachers may perceive transition as a natural progression rather than as a potentially disruptive or challenging process (Formosinho et al., 2016). Such a perspective may contribute to a relative underestimation of contextual and relational dimensions when compared to preschool teachers. Still, the mean values assigned by both groups fell within the same general range, suggesting convergence in their overall belief systems.

The most notable divergences concerned elements related to the school context and children's learning characteristics, both as facilitating and hindering conditions. Preschool teachers attributed greater relevance to aspects linked to pedagogical and organizational continuity between preschool and first grade and emphasized collaborative practices between professionals from both educational levels. These elements have been identified in the literature as central to facilitating smooth transitions (Dunlop et al., 2024; López & Benner, 2025). Conversely, the absence of such articulation has been described as increasing the risk of discontinuity and adjustment difficulties (Chan, 2012).

The stronger emphasis placed by preschool teachers on institutional continuity may reflect the curricular orientation of early childhood education in Portugal, which explicitly foregrounds articulation with primary education as a guiding principle (Lopes da Silva et al., 2016). Primary teachers, who operate within a more subject-structured and performance-oriented framework, may be less explicitly guided by transition-related curricular mandates, potentially contributing to their comparatively lower ratings of these dimensions.

Regarding children's learning and academic knowledge at school entry, both groups attributed lower importance to these elements, although preschool teachers assigned slightly higher ratings. This pattern diverges from international findings that frequently portray primary teachers as more academically oriented in their expectations for school readiness (e.g., Besi & Sakellariou, 2019b; Einarsdóttir, 2006; Şahin et al., 2013). In the present study, preschool teachers appeared to place greater emphasis on academic preparation, a result consistent with Fayez et al. (2016), who suggested that early childhood educators may experience stronger pressure to ensure children's readiness for formal schooling.

Although primary teachers attributed lower importance to several transition elements, they reported engaging more frequently in child-focused and articulation-related transition activities than preschool teachers.

This apparent discrepancy between lower attributed importance and higher reported engagement may indicate that institutional routines or school-level expectations, rather than personal beliefs alone, shape the enactment of transition practices. It also reinforces the modest alignment observed between

beliefs and practices, suggesting that professional roles and structural conditions may mediate how transition responsibilities are interpreted and operationalized.

Relationship between teachers' characteristics, transition beliefs and practices

We also wanted to understand how teachers' beliefs and practices concerning children's transition to the first year of primary education are related to each other and interact with their sociodemographic and professional characteristics (Question 3).

The study findings suggested a relationship between teachers' beliefs and their transition practices. However, these associations were generally modest, indicating that beliefs function as relevant – but not exclusive – predictors of reported practices. The best predictors of teachers' engagement in practices to promote a successful transition were their beliefs about the role of the children's family context as facilitating and hindering transition, the school context as a facilitator, and their perceived difficulties during transition activities.

Notably, beliefs centered on children's individual characteristics did not emerge as significant predictors of practices. This absence is theoretically meaningful, as it suggests that while teachers attribute high importance to children's affective and behavioral dimensions at a declarative level, these beliefs do not necessarily translate into differentiated transition strategies. One possible interpretation is that child-related beliefs are perceived as relatively stable characteristics, whereas family and school factors are viewed as more actionable and therefore more directly linked to professional intervention.

Teachers who recognized the importance of family-related elements were more likely to report frequent use of family- and child-focused practices, such as promoting dialogue with families and involving them in transition events. The transition process entails changes in family dynamics, routines, and expectations (Bérubé et al., 2018; Dockett & Perry, 2022). Thus, teachers who acknowledge these dynamics may be more inclined to adopt collaborative approaches, reinforcing the notion of transition as a shared process between school and family.

Similarly, teachers who valued school-related elements as facilitators reported implementing a broader range of transition practices across family, child, and articulation dimensions. This finding aligns with attributional perspectives suggesting that when educators locate responsibility within school-related factors, they demonstrate greater willingness to adjust their practices (Wang & Hall, 2018). In this sense, beliefs that emphasize institutional responsibility appear more strongly connected to enacted practices than beliefs centered on children's characteristics.

Results further indicated that articulation practices were more frequently reported by teachers who experienced fewer difficulties in coordinating between educational levels, but also by those who reported greater challenges in planning transition processes. This pattern may reflect compensatory dynamics, whereby collaboration serves as a strategy to manage organizational uncertainty. However, such activities may remain informal or insufficiently systematized, lacking the continuity emphasized in the literature (Dockett & Perry, 2022; Formosinho et al., 2016).

Overall, the modest magnitude of the associations observed reinforces broader evidence that teachers' beliefs, while influential, typically account for only part of the variability in professional practices. Structural conditions, institutional routines, and contextual constraints likely mediate how beliefs are enacted in daily pedagogical work.

We also examined how teachers' socio-professional characteristics influence their beliefs and practices. Overall, few significant associations were identified. However, differences emerged between private and public-school teachers regarding perceived difficulties and reported practices. Private school teachers reported greater challenges in managing transitions and articulating between departments and reported implementing child-focused and articulation practices less frequently.

One possible explanation lies in the organizational discontinuity between private preschool and public primary education sectors. According to national statistics (DGEEC, 2021), a substantial proportion of children enrolled in private preschools transition to public primary schools. This

sectoral mismatch may hinder continuity, limit access to shared documentation and curricular information, and complicate collaborative efforts.

Teachers with more years of experience reported more frequent engagement in articulation practices. Professional experience may facilitate the integration of transition activities into daily routines and enhance inter-level communication, particularly when teachers remain within the same institutional context over time.

It is important to acknowledge certain limitations of this study. Despite the large sample size, generalizability remains constrained by the underrepresentation of some teacher subgroups. Methodologically, reliance on self-reported questionnaire data may introduce social desirability or recall bias and does not capture the structure, intentionality, or quality of transition practices. Future research would benefit from incorporating qualitative methodologies, classroom observations, and document analysis to better understand how transition activities are enacted and institutionalized in practice.

Final considerations

This study used a cross-sectional and correlational design, so causal relationships between teachers' beliefs and practices cannot be inferred. Future longitudinal studies are needed to understand how teachers' beliefs and practices evolve throughout their formative and professional paths. Although our measures showed good reliability indicators, we relied only on teachers' self-reports. Including families and children's perceptions, as well as direct observations of teachers' practices, would provide a more comprehensive understanding of the transition process. Still, our study contributes to transition educational research by applying structural equation modeling to better estimate the explanatory relationship between multiple dimensions of teachers' transition beliefs more accurately and accounting for measurement errors (Hair et al., 2014).

Our findings suggest that teachers' beliefs in the family and school context as key facilitators of children's successful transition play a crucial role in encouraging them to implement more transition practices. They also indicate that addressing teachers' challenges in planning and organizing the transition process, as well as enhancing articulation between preschool and primary departments, is essential. These findings highlight the need for education and teaching institutions to integrate programs on educational transitions into their annual activity plans. This requires ensuring adequate time and resources for articulation and collaboration between teachers across different education levels, as well as for planning and implementing transition-related activities.

In this study, both early childhood educators and primary teachers emphasized the role of the family. However, family participation in the transition process cannot be mere dialogue between teachers and families. It is essential to involve families in activities to provide a deeper understanding of the new cycle and its functioning. Furthermore, the study raises reflection on the need to include the theme of educational transitions in both initial and continuing teacher training, ensuring it is recognized as a critical area of intervention in the school context.

Note

1. This structuring decision was also supported by empirical evidence. Correlations between facilitating and hindering conditions within the same ecological dimension were modest (.46 for child affective and behavioral, .66 for child knowledge, .48 for family context, and .42 for school context), indicating that the constructs were related but not redundant. Furthermore, CFA models specifying facilitating and hindering conditions as indicators of the same latent construct showed poor model fit ($X^2(769) = 18957.15$, CFI = .610, TLI = .584, RMSEA = .103, SRMR = .127), suggesting that these represent empirically distinct dimensions rather than opposite poles of a single continuum.

Acknowledgments

We sincerely thank the preschool and primary school teachers who generously participated in this study. Their willingness to share their experiences and insights was invaluable in deepening our understanding of the transition to first grade. We appreciate their time, dedication, and commitment to supporting young children during this important stage of their education.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by National Funds through FCT–Portuguese Foundation for Science and Technology, I.P., under the scope of the EDUNOVA.ISPA – Interdisciplinary Research Centre in Education, ISPA – Instituto Universitário de Ciências Psicológicas, Sociais e da Vida, Lisbon, Portugal; [UID/04853/2025]; DOI: <https://doi.org/10.54499/UID/04853/2025> and UIDEF – Unidade de Investigação e Desenvolvimento em Educação e Formação, [UID/04107/2025], <https://doi.org/10.54499/UID/04107/2025>.

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