



Teacher-child interactions in early childhood education in Cambodia: an initial validation of the *Teachers' Beliefs and Intentions Scale*

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KEYWORDS

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ABSTRACT

Teachers hold numerous beliefs that influence their everyday teaching practices in classroom settings. Despite the growing body of literature, there is a lack of context-specific evidence on teachers' beliefs and intentions regarding teacher-child interactions, specifically in developing countries. This study aimed to explore Cambodian early childhood education teachers' beliefs and intentions regarding teacher-child interactions, validate the psychometric properties of the *Teachers' Beliefs and Intentions Scale* in the Cambodian context, and examine relationships between beliefs, intentions, and their sub-dimensions. A total of 409 teachers (90.2% women) aged between 18 and 68 years took part in the study. Data were collected using the *Teachers' Beliefs and Intentions Scale*. Descriptive statistics, confirmatory factor analysis, and correlation analysis were conducted to achieve the research aims. Results indicate that the research participants hold child-centric beliefs and intentions and highlight a direct link between their beliefs and intentions in teacher-child interactions. Confirmatory factor analysis results revealed significant factor loadings for first-order factors and a meaningful covariance between the second-order factors of beliefs and intentions. Correlation analyses highlighted moderate interrelations among the second-order factors and their respective first-order factors, emphasizing the interconnectedness of beliefs and intentions. This study adds support to the validity of the *Teachers' Beliefs and Intentions Scale*, offering valuable insights into the relationship between early childhood education teachers' beliefs and intentions regarding teacher-child interactions in the Cambodian context. Implications for research and professional development of teachers are discussed.

Interacciones docente-estudiante en educación infantil de Camboya: una validación inicial de la *Escala de Creencias e Intenciones Docentes*

PALABRAS CLAVE

Creencias
Interacciones docente-
estudiante
Estilo de juego
Sensibilidad
Comunicación verbal/no
verbal
Camboya

RESUMEN

Los docentes mantienen numerosas creencias que influyen en sus prácticas de enseñanza diarias en el aula. Pese al creciente interés científico, existen pocos estudios sobre sus creencias e intenciones respecto a las interacciones docente-estudiante en países en vías de desarrollo. El presente trabajo investigó las creencias e intenciones de docentes de educación infantil en Camboya en relación con las interacciones docente-estudiante, centrándose en su estilo de juego, sensibilidad, comunicación verbal/no verbal, estructura factorial y relación. Un total de 409 docentes (90.2% mujeres) con edades entre 18 y 68 años participaron en el estudio. Se utilizó la *Escala de Creencias e Intenciones Docentes*. Se realizaron análisis descriptivos, análisis factorial confirmatorio y de correlación. Se halló que los participantes mantenían creencias e intenciones centradas en los estudiantes, destacando un vínculo directo entre sus creencias e intenciones en las interacciones docente-estudiante. El análisis factorial confirmatorio identificó cargas factoriales significativas para los factores de primer orden y una covarianza significativa entre los factores de segundo orden de creencias e intenciones. Se encontraron correlaciones moderadas entre los factores de segundo orden y sus respectivos factores de primer orden, enfatizando la interconexión entre creencias e intenciones. Este estudio apoya la validez de la *Escala de Creencias e Intenciones Docentes*, ofreciendo valioso conocimiento sobre la relación entre las creencias e intenciones respecto a las interacciones docente-estudiante, específicamente en el contexto de la educación infantil en Camboya. Se discuten las implicaciones para la investigación y el desarrollo profesional docente.

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Teacher-child interactions are fundamental to early childhood education (ECE), significantly influencing children's development. These interactions enhance academic skills and foster self-esteem and resilience, essential for future success (Choi et al., 2010). However, the effectiveness of these interactions is heavily contingent upon teachers' pedagogical beliefs and intentions, which are often shaped by several personal and contextual factors such as education, experience, and institutional constraints (Anderson, 2015; Bautista et al., 2023). Despite growing interest globally, significant research gaps exist regarding ECE teachers' beliefs and intentions in the Cambodian context. While recent studies have examined Cambodian ECE teachers' curriculum priorities and professional development needs (Karim et al., 2025), limited research has specifically investigated their beliefs and intentions regarding teacher-child interactions, particularly concerning playstyle, sensitivity to learning needs, and communication methods. Additionally, while the *Beliefs and Intentions Scale* developed by Wilcox-Herzog and Ward (2004) provides a validated measure for assessing these constructs, its application in Southeast Asian contexts requires careful cultural adaptation and validation. Research examining the cross-cultural validity of this instrument in Cambodia would contribute valuable methodological insights for future studies in similar cultural contexts. This research addresses this gap by investigating Cambodian ECE teachers' beliefs and intentions and how they relate. The study findings inform professional development of ECE teachers in Cambodia and similar developing contexts, ultimately contributing to the discourse on effective ECE practices.

Teacher-child interactions: teachers' beliefs and intentions

An emerging body of literature highlights the significance of teacher-child interactions in ECE settings. These interactions play a crucial role in enhancing the quality of instruction (Jones & Lake, 2020). High-quality teacher-child interactions help improve children's learning motivation (Pöysä et al., 2019) and influence children's development and academic performance (Cash et al., 2019). Teachers' supportive, sensitive, and involved interactions facilitate children's learning and socio-emotional development (Gardner, 2019). Nonetheless, the quality of these interactions depends upon teachers' pedagogical convictions and intentions, which can significantly affect their teaching methodologies and the children's learning experiences (Choi et al., 2010).

Beliefs are the subjective convictions an individual holds to be true, often determining one's attitude towards someone or something (Johnson, 2020). From an educational point of view, "teachers acquire and possess reified mental constructs based on comprehensive social experiences. Subsequently, these beliefs take on a life of their own and function as co-determiners of teachers' actions in the classroom" (Fives & Gill, 2015, p. 22). In the context of ECE teacher-child interactions, the Planned Theory of Behavior (TPB; Ajzen, 1991) suggests that teachers' beliefs about the importance and effectiveness of specific interaction strategies, their perceptions of social expecta-

tions regarding appropriate teacher-child interactions, and their self-efficacy in implementing these strategies, will influence their intentions and, ultimately, their actual interactions with children. Thus, understanding the relationship between teachers' beliefs and intentions can help design targeted professional development (PD) programs to improve the quality of teacher-child interactions that can positively impact educators and young children.

Assessing teacher-child interactions

Wilcox-Herzog and Ward (2004) developed the *Beliefs and Intentions Scale* (BIS) to explore the complex dynamics between teachers' beliefs and intentions in their interactions with children, focusing on playstyle, sensitivity to learning needs, and communication methods. BIS is grounded in the TPB framework (Ajzen, 1991), which posits that intentions to perform behaviors are influenced by attitudes, subjective norms, and perceived behavioral control. Within this theoretical framework, this scale examines two primary second-order constructs: beliefs (teachers' attitudes toward appropriate teacher-child interactions) and intentions (teachers' planned behavioral responses in classroom settings). Each second-order construct comprises three first-order dimensions: playstyle, sensitivity, and verbal/non-verbal communication. Playstyle refers to teachers' approaches to engaging with children during play activities, including facilitative versus directive orientations. While sensitivity denotes teachers' responsiveness to children's emotional and developmental needs, encompassing the attunement to individual differences, language, tone, gestures, and physical positioning to interact with children, it signifies verbal/non-verbal communication. This hierarchical structure reflects the theoretical assumption that specific behavioral domains (first-order factors) contribute to broader pedagogical orientations (second-order factors), providing a comprehensive framework for understanding the multidimensional nature of teacher-child interactions (Jöreskog, 2007).

Utilizing the BIS, recent studies showed that early-childhood educators with higher education and experience hold more favorable childcare beliefs linked to higher-quality toddler care (Anderson, 2015), and that supportive teaching beliefs foster stronger child-teacher relationships and better emotional regulation (Karabay, 2017). Moreover, targeted PD can further enhance teachers' convictions about nurturing children's self-regulation skills (Esenturk & Asi, 2023), leaving an important research gap on how specific interaction dimensions, such as playstyle, sensitivity, and communication, shape classroom outcomes. To address this, the present study focused on understanding ECE teachers' beliefs and intentions in Cambodia, particularly regarding these sub-dimensions.

The educational context of Cambodia

Cambodia, situated in Southeast Asia, is characterized by a predominantly youthful and rural population, with over 75% residing in rural areas (The World Bank, 2021). The ethnic com-

position is mainly homogenous, with approximately 95.8% of the population identifying as Khmer and speaking the Khmer language (National Institute of Statistics, 2020). As the state religion, Buddhism significantly influences Cambodians' sociocultural dynamics and daily lives. The country's educational framework for ECE consists of schools catering to children aged 3 to 5, which are categorized into public, private, and community ECE schools. Public ECE schools dominate enrollment figures, accounting for 76%, while community and private ECE schools comprise 13% and 11%, respectively (Ministry of Education, Youth and Sport [MoEYS], 2020). This diverse educational landscape underscores the importance of understanding teacher beliefs and intentions across different institutional contexts within Cambodia's ECE system.

In the ECE school sector, there are 11,799 teaching staff and 2,358 non-teaching staff, with a notable majority (89.5%) female (MoEYS, 2020). Public ECE school teachers must complete a two-year pre-service training program and serve for one year in a public ECE, while community and private ECE schools have no standardized teaching requirements. Public ECE school programs are typically housed within public primary schools and overseen by the Ministry of Education's Department of Early Childhood Education. In contrast, private ECE schools operate independently, often with better resources and qualified staff, while community ECE schools, prevalent in rural areas, frequently lack adequate resources and are managed by local commune councils.

The present study

The present study extends the understanding of ECE teachers' beliefs and intentions regarding teacher-child interactions in Cambodia. It assesses their relationship with their respective sub-dimensions of playstyle, sensitivity, and verbal/non-verbal communication. It has three research aims: 1) investigates Cambodian ECE teachers' beliefs and intentions concerning their interactions with children, particularly examining teachers' playstyle, sensitivity, and verbal/non-verbal communication patterns; 2) described the psychometric properties of the measurement instrument by examining the factor structure and reliability of the hypothesized sub-dimensions of playstyle, sensitivity, and verbal/non-verbal communication within the beliefs and intentions scale when applied to data from Cambodian ECE teachers; and 3) explores the relationships between Cambodian ECE teachers' beliefs and intentions and their respective sub-dimensions of playstyle, sensitivity, and verbal/non-verbal communication.

As a secondary objective, it was analyzed whether key demographic variables (specifically teachers' level of education, age, and years of teaching experience) were associated with different beliefs and intentions.

Based on previous literature, three hypotheses were included: 1) Cambodian early school teachers will demonstrate positive beliefs and intentions regarding developmentally appropriate teacher-child interactions (H1); 2) the BIS will demonstrate adequate psychometric properties in the Cambodian context,

with a hierarchical factor structure supporting both beliefs and intentions as second-order constructs (H2); 3) significant positive correlations between beliefs and intentions constructs and their respective sub-dimensions will exist (H3).

Method

Participants

The study involved 409 Cambodian ECE teachers from public ($n = 291$, 71%), private ($n = 28$, 6.8%), and community ($n = 90$, 22%) ECE schools. The participants were predominantly female (90.2%, $n = 369$) with ages between 18 and 68 years ($M = 34.2$ years, $SD = 8.7$). Participants had professional experience spanning one to 38 years ($M = 7.3$, $SD = 6.2$). Educational qualifications varied widely, with 46.6% holding a secondary school certificate or lower, 42.5% having a bachelor's degree, 3.4% a postgraduate diploma, 6.8% a master's degree, and 0.2% a PhD. Given the lack of standardized teaching qualifications to teach across the three types of schools (Om, 2022), teachers usually hold various academic and professional certifications. Only 54% reported having met the formal teaching qualifications specified for teachers in public ECE schools in Cambodia. As explained above, while public ECE teachers must have two years of pre-service teacher education training (Om, 2022), there are no such requirements for teaching in private and community ECE schools.

Measures

Developed by Wilcox-Herzog and Ward (2004), the BIS was adopted and translated into the Khmer language to be used with Cambodian ECE teachers. Using a five-point Likert scale, the scale assesses teachers' beliefs (17 items) and intentions (20 items). Rather than assuming bi-dimensionality, this study explored the scale's factor structure within the Cambodian context. The beliefs subscale comprises items distributed across three hypothesized dimensions: playstyle (5 items), sensitivity (6 items), and verbal/non-verbal communication (6 items). The intentions subscale includes playstyle (7 items), sensitivity (6 items), and verbal/non-verbal communication (7 items).

Procedure

The English version of the scale was translated into Khmer following cultural adaptation guidelines (Epstein et al., 2015). The scale was translated by three native speakers pursuing their doctoral studies in Hong Kong and having knowledge and working experience in tertiary education in Cambodia. Initially, each translator was asked to translate the scale independently. Then, they were invited to a discussion and consolidation with the research team. Each translator reflected on their translation during the discussion, and the research team compared all three versions. After extensive exchanges of ideas and revisions, the translators and the researchers reached a consensus on the translation of each item. During the finalization of the

translation, special attention was given to cross-language and cross-cultural equivalence regarding the meaning of each item, instead of simply a word-by-word translation.

Then, the scale's English and Khmer versions were set up on Qualtrics. A pilot study was conducted with 25 Cambodian ECE teachers to assess the scale's clarity, cultural appropriateness, and initial reliability. The pilot participants provided feedback on item comprehension and cultural relevance, which informed minor linguistic adjustments to ensure optimal understanding in the Cambodian context. The pilot study confirmed adequate internal consistency ($\alpha > .7$ for both beliefs and intentions scales) and supported the cultural appropriateness of the translated instrument. After seeking approval from the Human Research Ethics Committee of the host University and necessary permissions from the concerned authorities in Cambodia, the link to our online version of the scale was disseminated in multiple ways to reach the maximum number of children in Cambodia. Respondents provided informed consent and were informed that the data would be analyzed and reported anonymously.

Data analysis

To achieve the first research aim, teachers' responses to the beliefs and intentions scale developed by Wilcox-Herzog and Ward (2004) were analyzed using descriptive statistics, including means, standard deviations, and assessments of normality.

For the second research aim, a confirmatory factor analysis (CFA) to validate the scale's dimensional structure and determine the most appropriate factor model for the Cambodian context was conducted. Based on previous research on teacher-child interactions (Cash et al., 2019; Jones & Lake, 2020; Pöysä et al., 2019), four competing models to determine the most appropriate factor structure for our data were compared: (1) a one-factor model, where all items loaded on a single general factor; (2) a two-factor model with separate beliefs and intentions factors; (3) a six-factor first-order model with three dimensions (playstyle, sensitivity, and verbal/non-verbal communication) for both beliefs and intentions; and (4) our hypothesized hierarchical second-order model with beliefs and intentions as second-order factors, each with three first-order dimensions.

This approach was built on the theoretical foundation established in prior research (Wilcox-Herzog & Ward, 2004), categorizing items from the beliefs and intentions subscales into three dimensions of teacher-child interactions. For the CFA analysis, items with standardized factor loadings below .3 were considered for exclusion, following recommendations for minimum acceptable loadings in scale development research (Mendoza & Yan, 2025).

The CFA was executed using the *lavaan* package in R, utilizing robust maximum likelihood estimation to account for potential non-normality in the data. While some item-level loadings are modest and fall below conventional thresholds ($\lambda > 0.7$), they are all statistically significant and align with acceptable standards for initial cross-cultural adaptation of instruments (Hair et al., 2019).

For the third research aim, correlation analysis was performed to explore the relationships between overall beliefs

and intentions and their respective sub-dimensions, employing Pearson correlation coefficients to provide detailed insights into the links between these constructs.

Results

Teachers' beliefs regarding teacher-child interactions

Table 1 presents descriptive statistics for teachers' beliefs regarding teacher-child interactions. The items in the table are organized in descending order, from highest to lowest mean scores. The skewness values for most highly-rated belief items are notably negative, indicating distributions skewed toward the higher end of the agreement scale. Items receiving lower agreement include beliefs about forced participation in activities, "when many children in the class lose interest during story time, teachers should make them sit on their bottoms until the story is finished," and punitive responses to exploratory behavior, "when a child throws playdough one time, teachers should tell her to leave the playdough area". These items show positive skewness values, indicating distributions favoring disagreement with these more authoritarian approaches.

Teachers' intentions regarding teacher-child interactions

Table 2 presents descriptive statistics for teachers stated intentions regarding their interactions with children. The items in the table are organized in descending order, from highest to lowest mean scores. The highest rated intention items reveal that teachers most strongly intend to show enthusiasm for children's activities, listen attentively when children speak, and help children remember to clean up. The negative skewness values across most intention items indicate distributions skewed toward higher ratings, suggesting overall positive intentions toward implementing supportive teacher-child interactions. The kurtosis values for intention items vary considerably, with several sensitivity dimension items showing notably high kurtosis, indicating more peaked distributions.

Factor structure of playstyle, sensitivity, and verbal/non-verbal communication sub-dimensions of the Beliefs and Intentions Scale

Initial CFA analysis using a one-factor model with all 37 original items revealed that four belief items (7, 9, 15, and 16) demonstrated non statistically significant standardized factor loadings below .3, indicating poor performance. These items also showed the lowest endorsement frequencies in our descriptive analysis, suggesting limited relevance to Cambodian teachers' beliefs about appropriate teacher-child interactions. Specifically, these items reflected directive teaching approaches (Item 7: talking to children like adults; 16: forcing children to sit through unengaging activities), punitive responses (9: immediate exclusion for minor behavior), and practices inconsistent with contemporary child-centered pedagogical approaches (15: stopping activities when children lose interest). Following

Table 1*Descriptive statistics for teachers' beliefs regarding teacher-child interactions*

Item	Description	<i>M</i>	<i>SD</i>	Skw.	Kurt.
8	Teachers should encourage children to use good manners	4.54	0.63	-1.52	3.49
14	When children hit each other, teachers should make them apologize to each other	4.46	0.69	-1.79	5.5
17	When a child takes a toy from another child, teachers should intervene quickly	4.4	0.73	-1.38	2.55
6	Teachers should speak to children at their own level	4.35	0.78	-1.34	2.41
1	When children hit each other, teachers should help them to understand the other's feelings	4.23	0.83	-0.97	0.53
12	Teachers should make children pick up all of their toys (without adult help) during clean-up time	4.17	0.84	-1.15	1.79
11	When children play, teachers should sit down sometimes and talk with them about what they are doing	4	0.77	-0.69	1.11
2	During group time teachers should encourage children to sit and listen most of the time	3.86	1.00	-0.76	0.11
4	Teachers should encourage children to pick up their toys (with adult help) during clean-up time	3.81	1.18	-0.82	-0.24
10	Teachers should put a variety of interesting activities out during free choice time and then let children make their own activity choices	3.81	0.92	-0.93	1.15
5	When a child takes a toy from another child, teachers should observe and see what happens	3.78	1.20	-0.85	-0.14
13	When a child throws playdough one time, teachers should remind her that playdough is for rolling	3.64	1.12	-0.74	-0.04
3	Teachers should plan some novel activities to challenge children to try new experiences	3.41	1.00	-0.45	-0.04
15*	When many children in the class lose interest during story time, teachers should stop and go on to something else	3.03	1.24	-0.15	-0.94
16*	When many children in the class lose interest during story time, teachers should make them sit on their bottoms until the story is finished	2.77	1.33	0.11	-1.19
7*	Teachers should talk to children like adults	2.49	1.24	0.49	-0.80
9*	When a child throws playdough one time, teachers should tell her to leave the playdough area	2.06	1.22	0.97	-0.1

Note. Skw = Skewness; Kurt = Kurtosis.

Items marked with asterisk * had poor factor loadings and were excluded from subsequent analyses.

established recommendations for cross-cultural scale adaptation (DeVellis, 2016), these four items were excluded based on their poor statistical performance, conceptual misalignment, and cultural inappropriateness for the Cambodian ECE context. All intention items were retained, resulting in a refined 33-item scale (13 beliefs + 20 intentions).

The CFA results were compared to test four competing models: one-factor, two-factor, six-factor, and hierarchical second-order models. As shown in Table 3, the hierarchical second-order model demonstrated the best overall fit (χ^2 (488) = 3028.63, $p < .001$, CFI = .997, TLI = .999, RMSEA = .006, SRMR = .055) and was selected as the final model.

The selected hierarchical model showed significant associations between observed variables and their respective latent factors (see Figure 1). For the beliefs subscale, factor loadings ranged from .30 to .62, while the intentions subscale loadings

ranged from .33 to .73. The first-order factors loaded strongly onto their respective second-order factors: for beliefs and intentions. These second-order factor loadings confirm that beliefs and intentions can be meaningfully categorized into the three hypothesized sub-dimensions. The strong covariance of .84 between beliefs and intentions underscores their strong relationship while supporting their conceptual distinction.

The notably high correlations between second-order latent constructs and their corresponding first-order dimensions are theoretically expected in hierarchical confirmatory factor models. These models assume that first-order factors are reflective indicators of a broader, higher-order construct. For instance, the strong correlation observed between *Intentions* and *Intentions-Playstyle* ($r = .95$) reflects the idea that play-based intentions are a central expression of the overarching construct of instructional intentions.

Table 2*Descriptive statistics for teachers' intentions regarding teacher-child interactions*

Item	Description	<i>M</i>	<i>SD</i>	Skw.	Kurt.
6	I am enthusiastic about children's activities and efforts	4.58	0.58	-1.51	3.9
10	I listen attentively when children speak to me	4.56	0.57	-1.19	2.67
11	I help children remember to clean up as they finish activities	4.55	0.6	-1.39	3.15
19	I enjoy being with children	4.54	0.62	-1.37	2.8
2	I speak warmly to the children when I interact with them	4.45	0.60	-0.97	2.48
20	I show children the appropriate way to use play materials	4.25	0.74	-0.98	1.52
15	I talk with children in order to enhance their play	4.11	0.68	-0.56	0.87
3	I watch children play	4.08	0.87	-0.83	0.44
1	I get down on the floor and play with children	4.08	0.78	-0.7	0.66
4	I ask children open-ended questions rather than yes-no ones	4.05	0.79	-0.81	1.09
5	I engage children in two-way conversations about their play	4.05	0.74	-0.74	1.38
9	I make suggestions for how to use materials	4.03	0.79	-0.75	1.08
8	I talk with children about their play	4	0.73	-0.52	0.7
12	I hug and hold children	3.99	0.81	-0.59	0.26
7	I help children use play materials	3.87	0.85	-0.55	0.25
13	I get involved in children's dramatic play	3.85	0.84	-0.6	0.64
17	When I describe what children are doing, I give extra information	3.68	0.84	-0.43	0.35
18	I help children find activities to play with	3.6	0.88	-0.4	0.23
14	I am firm with children when it is necessary	3.58	0.93	-0.24	-0.19
16	When children talk to me, I restate their comments	3.33	1.06	-0.49	-0.14

Note. Skw = Skewness; Kurt = Kurtosis.

Table 3*Model fit indices for Alternative Factor Structures of the Beliefs and Intentions Scale*

Model	χ^2	df	<i>p</i> -value	CFI	TLI	RMSEA	90% CI RMSEA	SRMR
1. One-factor	11405.82	495	<.001	.742	.728	.084	[.080, .088]	.108
2. Two-factor	9482.48	494	<.001	.805	.793	.074	[.070, .078]	.092
3. Six-factor	3700.27	480	<.001	.963	.959	.026	[.020, .032]	.064
4. Hierarchical model	3028.63	488	<.001	.997	.999	.006	[.000, .017]	.055

Note. CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Means Square Residual.

Relationship between beliefs and intentions

Table 4 provides information on the relationships between teachers' beliefs and intentions, including correlations between the overall scales and their respective sub-dimensions of playstyle, sensitivity, and verbal/non-verbal communication. The correlation between overall beliefs and intentions indicates a strong, positive relationship between what teachers believe and what they intend to do in practice. This alignment is important as it suggests consistency between teachers' theoretical understandings and planned actions.

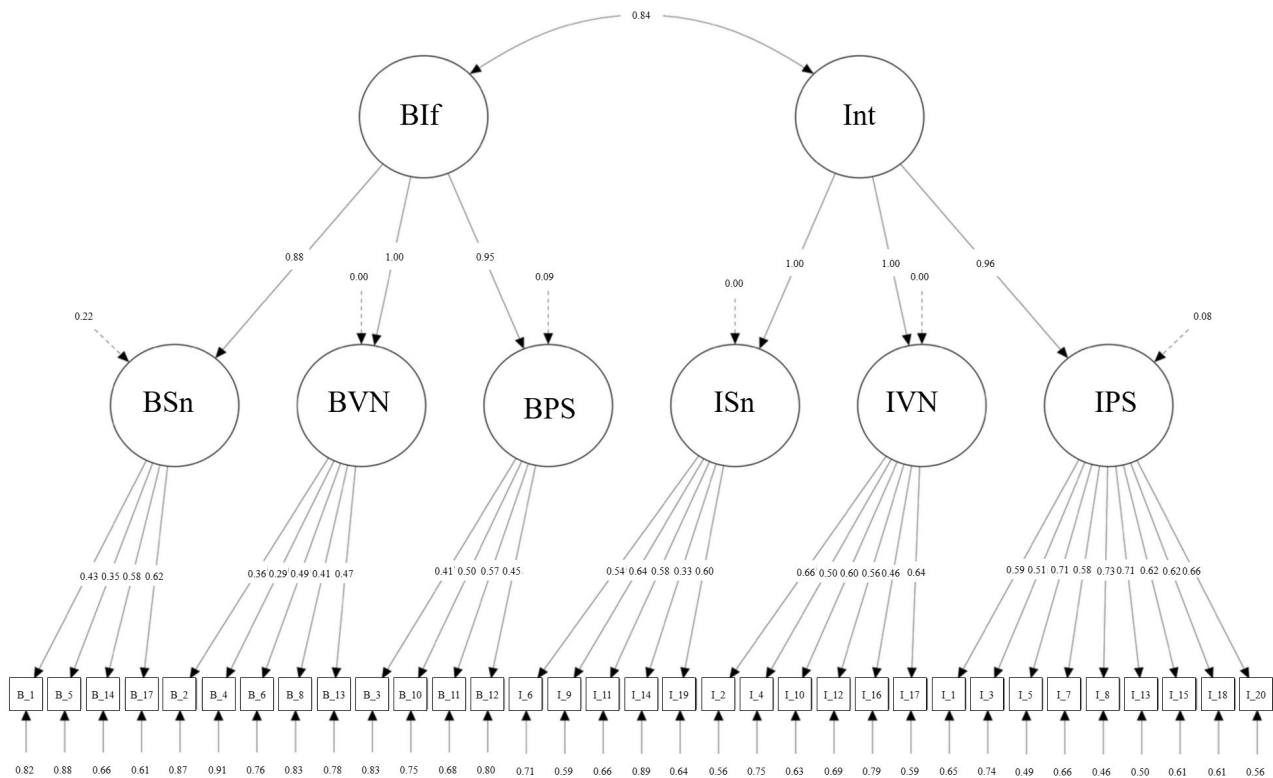
The internal consistency reliabilities (shown in parentheses on the diagonal) vary considerably across scales. The overall intentions scale demonstrates excellent reliability, while the playstyle intentions subscale and sensitivity intentions subscale

show good and acceptable reliability, respectively. In contrast, the beliefs scale shows acceptable reliability, but its subscales demonstrate marginal reliability. These lower reliability coefficients for the beliefs subscales suggest potential measurement issues that should be considered when interpreting the results.

The descriptive statistics for the composite scales show that mean scores for both beliefs and intentions are high, indicating generally positive beliefs and intentions regarding teacher-child interactions. The sensitivity dimension received the highest ratings for both beliefs and intentions, suggesting that Cambodian ECE teachers particularly value responsive and emotionally supportive interactions with children. The skewness values for the composite scales are all negative, confirming the overall tendency toward positive responses across both beliefs and intentions measures. The kurtosis values for the intentions scale

Figure 1

A hierarchical model of the Beliefs and Intentions Scale regarding teacher-child interactions



Note. BIf = Beliefs; Int = Intentions; BPS = Beliefs-Playstyle; BSn = Beliefs-Sensitivity; BVN = Beliefs-Verbal/Non-verbal; IPS = Intentions-Playstyle; ISn = Intentions-Sensitivity; IVN = Intentions-Verbal/Non-verbal; Beliefs and Intentions are modeled as second-order factors.

Table 4

Relationship between beliefs and intentions and their respective sub-dimensions of playstyle, sensitivity, and verbal/non-verbal communication

Variables	1	2	3	4	5	6	7	8
1. Beliefs	(.75)							
2. Beliefs-Playstyle	.79*	(.53)						
3. Beliefs-Sensitivity	.85*	.47*	(.53)					
4. Beliefs-Verbal/Non-Verbal	.8*	.49*	.53*	(.41)				
5. Intentions	.65*	.578*	.48*	.55*	(.91)			
6. Intentions-Playstyle	.61*	.57*	.44*	.49*	.95*	(.86)		
7. Intentions-Sensitivity	.56*	.44*	.45*	.49*	.83*	.71*	(.64)	
8. Intentions-Verbal/Non-Verbal	.58*	.51*	.43*	.51*	.9*	.77*	.65*	(.73)
Mean	4.03	3.84	4.14	4.1	4.06	3.99	4.26	4.01
SD	0.46	0.57	0.56	0.54	0.47	0.54	0.46	0.52
Skewness	-0.32	-0.25	-0.55	-0.3	-0.68	-0.47	-1.07	-0.43
Kurtosis	0.85	0.04	0.34	-0.16	3.96	1.89	5.22	2.06

Note. Values shown in parentheses on the diagonal are internal consistency reliabilities of the scales (Cronbach's alpha). The internal consistency coefficients for the subscales ranged from .41 to .91. While the Intentions scale demonstrated strong reliability ($\alpha = .91$), and its Playstyle subsection showed good reliability ($\alpha = .86$), some sub-dimensions exhibited lower coefficients: Beliefs-Verbal/Non-Verbal ($\alpha = .41$), Beliefs-Playstyle ($\alpha = .53$), and Beliefs-Sensitivity ($\alpha = .53$). Although these values fall below the conventional .7 threshold, methodological literature supports their acceptability in early-stage psychometric research (Nunnally, 1978) and when examining complex psychological and behavioral constructs in novel cultural contexts.

* $p < .001$.

and particularly the sensitivity intentions subscale are notably high, suggesting non-normal distributions that may require consideration when conducting inferential statistics.

The correlation analyses conducted to explore the associations between the demographic variables (i.e., level of education, teaching qualification, age, ECE school type, and years of teaching experience) and the two dimensions (i.e., beliefs and intentions) and three sub-dimensions (i.e., playstyle, sensitivity, and verbal/non-verbal communication) did not reveal any statistically significant relationships.

Relationship between beliefs and intentions and their sub-dimensions

Correlation analyses revealed significant relationships within and between the constructs of beliefs and intentions and their respective sub-dimensions (Table 4). The overall beliefs construct demonstrated strong positive correlations with its sub-dimensions: Beliefs-Playstyle, Beliefs-Sensitivity, and Beliefs-Verbal/Non-Verbal. Similarly, the intentions construct showed robust correlations with its sub-dimensions, particularly with Intentions-Playstyle and Intentions-Verbal/Non-Verbal.

Discussion

The study findings provide valuable insights into Cambodian ECE teachers' beliefs and intentions regarding teacher-child interactions, focusing on playstyle, sensitivity, and verbal/non-verbal communication.

Teachers' beliefs about teacher-child interactions

Analysis of teachers' beliefs regarding appropriate teacher-child interactions reveals a notable emphasis on traditional social norms and behavior management strategies. Cambodian teachers strongly value encouraging good manners, having children apologize after conflicts, and quick intervention by the teachers when children take toys from each other, suggesting prioritization of social etiquette and conflict resolution strategies that emphasizing traditional values.

Teachers strongly endorse that "teachers should speak to children at their own level," indicating recognition of developmentally appropriate communication practices. This aligns with Gelir's (2023) findings that teachers' beliefs significantly predict classroom interaction quality, particularly in emotional support and classroom organization. Items receiving lower agreement include beliefs about forced participation and punitive responses to exploratory behavior, suggesting recognition of children's autonomy and natural learning consequences (Chen, 2024).

The negative skewness values for most highly rated belief items indicate distributions skewed toward higher agreement, reflecting strong consensus on these fundamental interaction principles. This pattern is consistent with research on cultural influences in ECE, where shared cultural values often manifest in teaching philosophies (Harkness et al., 2013). This neg-

ative skewness pattern is common in Likert scale data, where respondents tend toward favorable responses. Several items also demonstrate high kurtosis values, indicating more peaked distributions than would be expected in a normal distribution (Jöreskog, 2007).

Teachers' intentions regarding implementation of beliefs

The examination of teachers' intentions reveals strong inclinations toward responsive caregiving practices and effective classroom management. Teachers most strongly intend to show enthusiasm for children's activities, listen attentively when children speak, and help children remember to clean up. These findings parallel recent research by Hu et al. (2023) and Wu et al. (2024), demonstrating that early childhood teachers' intentions to implement responsive interactions are strongly associated with their underlying beliefs about child development. While teachers strongly intend to be emotionally present and maintain classroom organization, they show more moderate intentions regarding restating children's comments and being firm when necessary. This suggests potential areas for professional development in advanced communication strategies that support language development through techniques like expanding on children's language.

The consistently negative skewness values across most intention items indicate distributions skewed toward higher ratings, suggesting overall positive intentions toward implementing supportive teacher-child interactions. This pattern aligns with findings from Chan (2023), who found that ECE teachers generally express strong intentions to support children's development, even when their actual implementation varies.

Relationship between beliefs and intentions

The correlation between overall beliefs and intentions indicates a strong, positive relationship between what Cambodian ECE teachers believe and what they intend to do in practice. This alignment is crucial as it suggests consistency between theoretical understanding and planned action. The strong positive correlation ($r = .65$) between beliefs and intentions suggests meaningful alignment while maintaining their conceptual distinction as separate constructs. This finding aligns with research by Wolstein et al. (2021), who identified that teacher beliefs predict but do not entirely determine observed classroom practices.

Cross-construct analyses revealed that Beliefs-Playstyle and Intentions-Playstyle showed a notable correlation, highlighting consistency between beliefs and intentions related to play-based approaches. This finding is particularly relevant given recent research by Tam (2023), which demonstrated that alignment between play-related beliefs and intentions positively impacts the implementation of developmentally appropriate practices. Interestingly, the correlation between Beliefs-Sensitivity and Intentions-Sensitivity was relatively lower, suggesting potential disparities between sensitivity-related beliefs and intended practices. This finding resonates with research by Gelir (2023),

which found that teachers' sensitivity beliefs may not always translate directly into intentions due to contextual constraints and competing priorities in ECE settings.

Within the beliefs construct, the strong correlations between Beliefs-Sensitivity, Beliefs-Playstyle, and Beliefs-Verbal/Non-Verbal communication underscore the interconnectedness and importance of these sub-dimensions in shaping teachers' beliefs and intentions in fostering developmentally supportive environments for children in ECE settings in Cambodia.

Factor structure analysis

The hierarchical model confirmed significant associations between the observed variables and their respective latent factors for beliefs and intentions, structured with first-order factors of playstyle, sensitivity, and verbal/non-verbal communication. The strong covariance of .84 between beliefs and intentions further underscores their strong correlation, highlighting the relationship between teachers' philosophical orientations and planned practices.

The hierarchical factor structure aligns with research by Ansari & Pianta (2019), which identified similar multidimensional structures in teacher-child interaction constructs across cultural contexts. The strong factor loadings for both beliefs and intentions constructs validate the theoretical framework underlying this research and suggest that these constructs are applicable in the Cambodian ECE context. Nevertheless, the poor factor loading of items highlights the contextual differences in teacher-child interactions. Given that the scale was developed in a Western context, the items may not align with Cambodia's local conceptualization of teacher-child interactions, educational philosophies, and child development practices (Al-Nakeeb & Ghadi, 2024; Kovalchuk & Rapoport, 2018).

The items with poor factor loading may not accurately reflect the beliefs and intentions of the participants regarding teacher-child interactions, warranting researchers to be sensitive to the reliability of scales developed in other contexts. Employing mixed-method approaches and combining locally developed measures and qualitative data collection methods with BIS could help address the reliability and validity issues to capture culture-specific beliefs and intentions regarding teacher-child interactions (Al-Nakeeb & Ghadi, 2024).

Practical implications

The findings from this study offer several important implications for ECE in Cambodia. First, the strong correlation between beliefs and intentions suggests that professional development efforts should address both theoretical understanding and practical application of effective teacher-child interactions. This aligns with research by Esenturk & Asi (2023), which demonstrated that professional development interventions targeting both beliefs and implementation strategies yield the strongest improvements in classroom quality.

Second, the relatively lower reliability for beliefs subscales suggests a need for refined measurement tools that better cap-

ture the nuanced belief systems of Cambodian ECE teachers. As noted by Franco et al. (2024), culturally responsive assessment tools are essential for accurately measuring teacher beliefs across educational contexts.

Lastly, the strong emphasis on traditional social norms alongside recognition of children's developmental needs suggests an opportunity to build professional development programs that honor cultural values while incorporating evidence-based practices. Similar approaches have been successful in other cultural contexts, as demonstrated by research showing positive outcomes when traditional values are integrated with contemporary ECE practices (Konca & Erden, 2021).

Limitations and future research questions

Although this research sheds light on the beliefs and intentions of Cambodian ECE teachers, the cross-sectional design limits the examination of causal relationships or developmental changes. Adopting diverse research methodologies can help develop a nuanced understanding of teacher-child interactions. Longitudinal studies examining changes in beliefs and intentions over time, case studies across various urban and rural ECE schools, and investigations into the relationships between teachers' beliefs, intentions, and practices could strengthen the findings. Given that the study entirely relied on a single beliefs and intentions scale, the analysis is limited to the internal structure and lacks external validation. Future research should also explore the cross-cultural applicability of these findings and the variations in teacher beliefs and intentions across different settings.

Conclusion

This validation of the BIS in Cambodia advances understanding of teacher-child interaction conceptualizations across cultural contexts. Cambodian ECE teachers showed coherent, child-centered beliefs and intentions that align with contemporary pedagogical approaches while reflecting unique cultural values. The positive relationship between beliefs and intentions demonstrates meaningful consistency in teachers' professional orientations, while the multidimensional factor structure confirms that teacher-child interactions encompass distinct yet interconnected domains. Moreover, this study sheds light on the complex interplay between universal pedagogical principles and culturally-specific educational practices. While this study was conducted specifically in Cambodia, the findings contribute to the broader understanding of how cultural contexts influence teacher-child interactions, providing a foundation for future cross-cultural research in ECE.

Author contributions

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Declaration of interests

The authors declare that there is no conflict of interest.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alcañiz-Colomer, J., & Moya, M. (2024). Educational level and social attitudes: Unraveling patterns and methodological considerations. *Psychology, Society & Education*, 16(2), 21-31. <https://doi.org/10.21071/pse.v16i2.17078>
- Al-Nakeeb, A. A., & Ghadi, M. Y. (2024). Human resource management practices for effective organizational change: A review of research in western and non-western countries. *Foundations of Management*, 16(1), 7-24. <https://doi.org/10.2478/fman-2024-0001>
- Anderson, T. L. (2015). *Beliefs about toddler and care: a new measure for infant toddler teachers*. [Open access dissertation]. Purdue University.
- Ansari, A., & Pianta, R. C. (2019). Teacher-child interaction quality as a function of classroom age diversity and teachers' beliefs and qualifications. *Applied Developmental Science*, 23(3), 294-304. <https://doi.org/10.1080/10888691.2018.1439749>
- Bautista, A., Cerdán, R., García-Carrión, R., Salsa, A. M., Aldoney, D., Cabedo-Mas, A., Campos, R., Clarà, M., Gámez-Guadix, M., Ilari, B., Kammerer, Y., Macedo-Rouet, M., Mendive, S., Muñoz, D., Saux, G. I., Sun, H., Sun, J., Ventura, A. C., Yang, W., Khalfaoui, A., Noguera, R. ..., Yeung, J. (2023). What research is important today in human development, learning and education? JSED editors' reflections and research calls. *Journal for the Study of Education and Development*, 46(1), 1-38. <https://doi.org/10.1080/02103702.2022.2137980>
- Cash, A. H., Ansari, A., Grimm, K. J., & Pianta, R. C. (2019). Power of two: The impact of 2 years of high quality teacher child interactions. *Early Education and Development*, 30(1), 60-81. <https://doi.org/10.1080/10409289.2018.1535153>
- Chan, K. C. J., Monaghan, P., & Michel, M. (2023). Adapting to children's individual language proficiency: An observational study of preschool teacher talk addressing monolinguals and children learning English as an additional language. *Journal of Child Language*, 50(2), 365-390. <https://doi.org/10.1017/S0305000921000854>
- Chen, J. J. (2024). An integrated approach to social and emotional teaching (SET): A qualitative study of the beliefs and practices of preschool teachers in the United States. *Early Childhood Education Journal*, 1-17. <https://doi.org/10.1007/s10643-024-01803-9>
- Choi, H.-Y., Park, J.-H., & Shin, H.-Y. (2010). Children's social behaviors in relation to the quality of teacher-child interactions and teachers' beliefs. *International Journal of Human Ecology*, 11(1), 85-96.
- DeVellis, R. F. (2016). *Scale development: Theory and applications* (4th ed.). Sage Publications.
- Epstein, J., Osborne, R. H., Elsworth, G. R., Beaton, D. E., & Guillemin, F. (2015). Cross-cultural adaptation of the health education impact questionnaire: Experimental study showed expert committee, not back-translation, added value. *Journal of Clinical Epidemiology*, 68(4), 360-369. <https://doi.org/10.1016/j.jclinepi.2013.07.013>
- Esenturk, B.C., & Asi, D. (2023). Teachers predicting self-regulation skills of children: the relationships among teacher beliefs, teaching intentions and preschoolers' self-regulation skills. *Education 3-13*, 51(7), 1195-1207. <https://doi.org/10.1080/03004279.2022.2055604>
- Fives, H., & Gill, M. G. (2015). *International handbook of research on teachers' beliefs*. Routledge. <https://doi.org/10.4324/9780203108437>
- Franco, M. P., Bottiani, J. H., & Bradshaw, C. P. (2023). Assessing teachers' culturally responsive classroom practice in pk-12 schools: A systematic review of teacher-, student-, and observer-report measures. *Review of Educational Research*, 94(5), 743-798. <https://doi.org/10.3102/00346543231208720>
- Gardner, R. (2019). Classroom interaction research: The state of the art. *Research on Language and Social Interaction*, 52(3), 212-226. <https://doi.org/10.1080/08351813.2019.1631037>
- Gelir, I. (2023). Teacher's beliefs and flexible language strategies in a monolingual preschool classroom. *Education 3-13*, 51(8), 1256-1266. <https://doi.org/10.1080/03004279.2022.2061028>
- Harkness, S., Super, C. M., Mavridis, C. J., Barry, O., & Zeitlin, M. (2013). Culture and early childhood development. In Britto, P. R., Engle, P. L., & Super, C. M. (Eds.), *Handbook of early childhood development research and its impact on global policy* (pp. 142-160). Oxford.
- Hu, B. Y., Huang, P., Wang, S., & Curby, T. (2023). Teachers' beliefs about children and children's literacy development: The mediating role of responsive teaching. *Journal of Early Childhood Literacy*, 23(4), 751-777. <https://doi.org/10.1177/14687984211037004>
- Johnson, S. J. (2020). *Teaching young children science: early care and education teachers' attitudes, beliefs, and classroom practices* [PhD Thesis, The Education University of Hong Kong]. ProQuest.
- Jones, I., & Lake, V. E. (2020). Ethics of care in teaching and teacher-child interactions. *The Journal of Classroom Interaction*, 55(2), 51-65. <https://www.jstor.org/stable/45444896>

- Jöreskog, K. G. (2007). Factor analysis and its extensions. In R. Cudeck & R. C. MacCallum (Eds.), *Factor analysis at 100: Historical developments and future directions* (pp. 47-77). Lawrence Erlbaum Associates Publishers.
- Karabay, S.O. (2017). Emotion regulation, teaching beliefs and child-teacher relationships from the perspectives of pre-school teachers. *Education 3-13*, 47(1), 101-115. <https://doi.org/10.1080/03004279.2017.1405057>
- Karim, S., Bautista, A., Mendoza, N. B., Soth, S., & Lee, K. (2025). Early childhood education in Cambodia: preschool teachers' beliefs, curriculum priorities, and professional development needs. *Journal of Early Childhood Teacher Education*, 1-17. <https://doi.org/10.1080/10901027.2025.2473734>
- Kovalchuk, S., & Rapoport, A. (2018). Democratic citizenship education in non-western contexts: Implications for theory and research. *Compare: A Journal of Comparative and International Education*, 48(3), 339-348. <https://doi.org/10.1080/03057925.2018.1445964>
- Mendoza, N. B., & Yan, Z. (2025). From beliefs to behaviors: Conceptualizing and assessing students' practices that reflect a growth mindset. *Social Psychology of Education*, 28(1), Article 73. <https://doi.org/10.1007/s11218-025-10032-w>
- Ministry of Education, Youth and Sport (MoEYS). (2019). *Cambodia's education 2030 roadmap: Sustainable development-goal 4*. MoEYS. https://planipolis.iiep.unesco.org/sites/default/files/ressources/cambodia_education_2030_roadmap_sustainable_development.pdf
- Ministry of Education, Youth and Sport (MoEYS). (2020). *Education congress: The education youth and sport performance in the academic year 2018-2019 and goals for the academic year 2019-2020*. <https://nepcambodia.org/2020/03/25/education-congress-the-education-youth-and-sport-performance-in-the-academic-year-2018-2019-and-goals-for-the-academic-year-2019-2020-2/>
- National Institute of Statistics. (2020). *General population census of the Kingdom of Cambodia 2019*. <https://www.nis.gov.kh/nis/Census2019/Final%20General%20Population%20Census%202019-English.pdf>
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.
- Nuraini, K. (2018). The roles of teacher to promote classroom interaction in children's classes. *DIDAKTIKA: Jurnal Pemikiran Pendidikan*, 22(1), 30-40. <https://journal.umg.ac.id/index.php/didaktika/article/view/209/170>
- Om, S. (2022). Early childhood education in Cambodia: Current challenges and development trends. In V. McNamara, & M. Hayden (Eds.), *Education in Cambodia from year zero towards international standards* (pp. 13-27). Springer. <https://doi.org/10.1007/978-981-16-8213-1>
- Pöysä, S., Vasalampi, K., Muotka, J., Lerkkanen, M., Poikkeus, A., & Nurmi, J. (2019). Teacher-student interaction and lower secondary school students' situational engagement. *British Journal of Educational Psychology*, 89(2), 374-392. <https://doi.org/10.1111/bjep.12244>
- Salminen, J., Pakarinen, E., Poikkeus, A., Laakso, M., & Lerkkanen, M. (2022). Teacher-child interactions as a context for developing social competence in toddler classrooms. *Journal of Early Childhood Education Research*, 11(1), 38-67. <https://journal.fi/jecer/article/view/114006>
- Tam, A. C. F. (2023). Transforming preschool language teachers' beliefs of implementing play-based learning in a professional learning community. *International Journal of Early Years Education*, 31(1), 46-62. <https://doi.org/10.1080/09669760.2022.2065247>
- The World Bank. (2021). *World Bank data*. <https://data.worldbank.org/indicator>
- Wilcox-Herzog, A., & Ward, S. L. (2004). Measuring teachers' perceived interactions with children: A tool for assessing beliefs and intentions. *Early Childhood Research & Practice*, 6(2), 1-13.
- Wolstein, K., Ehm, J. H., Peters, S., & Mischo, C. (2021). Preschool teachers' self-efficacy beliefs and interaction quality in the domain of instructional support - Do professional vision competencies moderate this relation? *European Early Childhood Education Research Journal*, 29(4), 617-632. <https://doi.org/10.1080/1350293X.2021.1941171>
- Wu, J., & Huang, R. (2024). Exploring beliefs among Chinese preschool teachers and their associations with perceived practices and process quality. *European Journal of Teacher Education*, 1-20. <https://doi.org/10.1080/02619768.2024.2414907>