



## Perceived organisational learning and professional development of kindergarten teacher in China: The mediating role of teacher efficacy

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### ABSTRACT

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#### Keywords

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It is evident that early childhood teachers' professional development forms the foundation for maintaining the quality of early childhood education. Therefore, the purpose of this study is to assess the impact of Chinese kindergarten teachers' perceptions of organizational learning on their professional development and sense of teacher efficacy. The primary data were collected through a questionnaire survey of kindergarten teachers, with 553 valid responses analyzed. The results indicate that teachers from private kindergartens exhibit higher levels of professional development compared to those from public institutions. Additionally, teachers aged 50 and above demonstrate significantly higher professional development levels than those aged 18–25. Teachers holding a bachelor's degree or higher show markedly greater professional development than those with a junior college degree or lower. Furthermore, teachers with over ten years of teaching experience display higher professional development levels than those with less than one year of experience. The perception of organizational learning has a significant and positive impact on both professional development and teacher efficacy. Moreover, teacher efficacy positively influences professional development and mediates the relationship between organizational learning and professional development. These findings provide practical guidance for kindergarten administrators in designing organizational learning environments, establishing teacher learning communities, and supporting reflective teaching and professional growth.

**Contribution/Originality:** This study is an original work conducted by the authors. It advances the existing literature by investigating the impact of organizational learning on the professional development of Chinese kindergarten teachers and their efficacy. The study provides new insights into how organizational learning fosters teachers' growth and professional improvement.

### 1. INTRODUCTION

Early childhood education serves as the foundation of a nation's education system and the beginning of lifelong learning. As the primary practitioners at this stage, early childhood teachers' professional capabilities directly influence the quality of preschool education and children's comprehensive development (Ogunkoya, 2023). "Sustainable Development Goal 4" (SDG4), introduced by UNESCO (2016), emphasizes "ensuring inclusive and quality education," with specific targets that include providing quality preschool education. In this context, enhancing the professional development of early childhood teachers is considered an essential strategy for improving the quality of preschool education (Saini, Sengupta, Singh, Singh, & Singh, 2023).

Early childhood teachers' professional development refers to a dynamic process in which they continuously enhance their professional concepts, sentiments, knowledge, and practical abilities through systematic learning, reflective practice, and collaboration throughout their careers. This process helps teachers adapt to the demands of educational reform and promotes children's holistic development (Kala & Sungur-Alhan, 2023). It is not only about improving teachers' personal knowledge and skills but also about optimizing the educational ecosystem. Researchers have emphasized that effective professional development can significantly enhance teachers' educational practices and abilities (Desimone, 2009), thereby improving students' learning outcomes (Andersson & Palm, 2017).

Lemus and Saavedra (2024) confirmed that organizational learning exerts an active impact on early childhood teachers' professional development. The implementation of effective organizational learning strategies can significantly improve teachers' professional growth and, consequently, enhance the quality of education. Organizational learning is a dynamic process through which an organization's learning capabilities are enhanced by individual and collaborative efforts, supported by factors such as organizational structure, culture, and leadership (Finger & Brand, 1999). It enables tacit knowledge to become explicit through the establishment of communities of practice (Wenger, 1998). Previous research indicates that organizational learning is a vital strategy for continuous improvement and innovative educational practices. The management and support systems within kindergartens are crucial for fostering teachers' professional development (Bellibaş, Gümüş, & Kılınç, 2020).

Although the influence of organizational learning on the professional development of an organization's members has been demonstrated in existing studies, most of these studies have focused on enterprises or primary and secondary schools (Alerasoul, Afeltra, Hakala, Minelli, & Strozzi, 2022; Buhagiar & Anand, 2023; Mainert, Niepel, Lans, & Greiff, 2018; Schechter, 2007) while failing to address the organizational characteristics of kindergartens (Wadel & Knaben, 2022), which can vary depending on their establishment entities, broadly categorized into public and private sectors. Establishing an organizational learning atmosphere and system in a kindergarten not only optimizes the mechanism for the professional development of early childhood teachers (González-Motos & Saurí Saula, 2023) but also enhances their sense of efficacy, laying a crucial foundation for their ongoing professional growth (Alavi, Abdul Wahab, Muhamad, & Arbab Shirani, 2014).

Hauge (2019) argues that teachers' professional development is influenced not only by external factors but also by personal elements, which serve as the core driving forces behind individual teachers' growth and improvement (Zhang, Admiraal, & Saab, 2021). Zhang, Fathi, and Naderi (2025) point out that teacher efficacy is a key factor that influences teachers' teaching effectiveness, personal growth, and development. Meanwhile, Thommen, Grob, Lauermann, Klassen, and Praetorius (2022) define teacher efficacy as teachers' belief in and perception of their ability to complete teaching tasks effectively and achieve educational goals, as reflected in their teaching practices, classroom management, and student engagement. Changes in teacher efficacy have a significant impact on teachers' professional development and growth (Gordon, Blundell, Mills, & Bourke, 2023). However, although individual factors such as age, teaching experience, and educational background are considered to influence kindergarten teachers' professional development, whether these factors make a significant difference remains debatable (Jang & Kim, 2024; Visković & Višnjić Jevtić, 2018).

Ryan and Hendry (2023) observed that self-efficacy is a pivotal driving factor in determining teachers' efforts in professional practice. Huang, Zhang, and Huang (2020) found that the school's operational conditions exerted a beneficial effect on teacher efficacy, which, in turn, influenced teachers' personal initiatives for professional development. Jang and Kim (2024) discovered that teacher efficacy serves as a mediating factor within the relationship between kindergarten organizational learning atmospheres and teachers' professional development. Nevertheless, despite teacher efficacy being regarded as a driving force for teachers' professional development (Kim, Shin, & Chae, 2016; Tschannen-Moran & Hoy, 2001; Wang, 2024), the effect of its role as a mediator between organizational learning and teachers' professional development has yet to be fully clarified.

The quality of early childhood education has become an increasingly critical concern in China. Kindergarten teachers' professional development serves as a key driver for ensuring high-quality education and supporting children's lifelong learning. However, limited research has examined how kindergarten teachers' perceptions of organizational learning influence their professional development (Tam, 2025). This study applies Andragogy theory to kindergarten teachers to assess its relevance in early childhood education, emphasizing adults' self-directed learning, experience integration, and problem-centered approach (Edwards-Fapohunda, 2024). By analyzing teachers' perceptions of organizational learning, the study uncovers how these perceptions influence professional development through adult learning mechanisms, thereby enriching empirical research on Andragogy in early childhood education (Grund, Singer-Brodowski, & Buessing, 2024). Specifically, it investigates the effects of teachers' perceptions of organizational learning and their sense of teacher efficacy on professional development, as well as the mediating role of teacher efficacy in this relationship. Furthermore, it analyzes differences in teachers' professional development across educational backgrounds, age groups, teaching experience levels, and kindergarten types.

## 2. LITERATURE REVIEW

### 2.1. Current Organisational Status of Kindergartens in China

Seyyed Kalan, Zirak, Azad, and Golparvar (2016) discovered that the core of teachers' professional development lies in establishing an organizational learning mechanism within the school. Organizational learning in kindergartens in China often takes the form of professional learning communities, learning-oriented teaching and research groups, along with kindergarten-based instruction and inquiry learning communities (Jiang & Zheng, 2021; Yin, To, Keung, & Tam, 2019). Tacit knowledge is externalized by establishing a community of practice (Wenger, 1998). For instance, some kindergartens in Shanghai, China, have implemented "learning-oriented teaching and research groups," thereby increasing teachers' ability to teach information technology by 40% (Li, Xu, & Lu, 2024). As evidenced by existing research, organizational learning functions as a vital strategy for promoting continuous and innovative educational practices (Bellibaş et al., 2020). Furthermore, the quality of kindergarten-based instruction and inquiry learning communities directly affects the effectiveness of teachers' professional development. Teachers' ability to cooperate has been enhanced through model kindergartens based on a "lesson study" and "mentoring system" (Yan & Zhao, 2022).

### 2.2. Research on the Differences in Preschool Teachers' Professional Development and Background Variables

Many scholars have identified the factors that primarily impact the professional development of kindergarten teachers, including age, teaching experience, educational background, and the type of kindergarten. Meke and Rembe (2013) found that the age of preschool teachers in Malawi was a significant factor that greatly affected their professional development. Salih, Amin, Omer, Hassan, and Kamal (2023) noted that kindergarten teachers exhibit stage-specific characteristics, which influence their adaptability and career development. While Douglas and Tim (2011) observed that teachers with higher academic qualifications demonstrated greater professional competence, Clotfelter, Ladd, and Vigdor (2007) found a negative correlation between academic qualifications and professional development. Beisly and Lake (2021) discovered that teachers with a bachelor's degree achieved significantly higher scores in educational knowledge than those with an associate degree, indicating that higher educational levels are associated with greater educational knowledge. Visković and Višnjić Jevtić (2018) proposed that preschool teachers' level of professional development is influenced by their duration of instructional experience. Additionally, Bacus and Macalisang (2024) demonstrated that teachers in public and private kindergartens have different professional development needs and abilities. Overall, the professional development of kindergarten teachers in China may be shaped by factors such as age, teaching experience, educational background, and the type of kindergarten. Based on this, the following hypotheses are proposed.

*H<sub>1</sub>: Significant differences are present in the professional development of Chinese kindergarten teachers based on age.*

*H<sub>1c</sub>: Significant differences are present in the professional development of Chinese kindergarten teachers based on teaching experience.*

*H<sub>1d</sub>: Significant differences are present in the professional development of Chinese kindergarten teachers based on their educational background.*

*H<sub>1e</sub>: Significant differences are present in the professional development of Chinese kindergarten teachers based on the type of kindergarten.*

### *2.3. Kindergarten Teachers' Perception of Organisational Learning and Professional Development*

Teachers' motivation and pathways as adult learners are explained by the Andragogy theory, with an emphasis on the systemic wholeness of teachers as adults in the learning process (Knowles, 1984). Organizational learning can provide a platform for teachers to study continuously and grow. Kindergartens can establish learning organizations that encourage teachers to enhance their teaching experience by participating in teaching discussions, observations, and reflections (Franz, 2013). As learning is the core driving force of early childhood teachers' professional development, it relies on the school's organizational learning mechanisms (Asbari, 2024). According to Seyyed Kalan et al. (2016), teachers' professional development capabilities are positively and significantly influenced by the dimensions of their organization's learning mechanisms. In other words, organizational learning can be a decisive predictor of individual development. Lemus and Saavedra (2024) discovered a notable and active correlation between organizational learning and teachers' professional development while studying an educational institution in Ecuador, demonstrating that the adoption of effective strategies can significantly promote teachers' development and improve the quality of education. Meanwhile, Ballenas, Tidong, Granaderos, and Tagadiad (2023) found that organizational learning is crucial for teachers' ongoing professional development, which can be anticipated by five dimensions: management commitment and empowerment, experimentation, risk-taking, openness, and interaction with the external environment, as well as knowledge transfer and integration. In summary, kindergarten teachers' professional development is greatly promoted by their perception of organizational learning; therefore, the research hypothesis is proposed.

*H<sub>2</sub>: Chinese kindergarten teachers' perceptions of organizational learning have a significant positive impact on professional development.*

### *2.4. Kindergarten Teachers' Perception of Organisational Learning and Teacher Efficacy*

Organizational learning is an important driving force for enhancing teacher efficacy. According to andragogy theory, teacher efficacy can be improved through various approaches, such as building teaching experience, engaging in reflective practice, and seeking peer support (Shoulars, 2025). Organizational learning provides kindergarten teachers with valuable resources and a conducive learning environment. By participating in such learning activities, teachers can continuously accumulate teaching experience through reflection and practice, thereby strengthening their sense of efficacy (Zheng, Yin, & Liu, 2021). Additionally, Choi and Kang (2019), utilizing data from the OECD's Teaching and Learning International Survey (TALIS), found that teachers' perceptions of "collaborative" organizational learning have a significant and positive impact on their teacher efficacy. Using data from 125,000 teachers across 44 countries in the 2018 TALIS, Gouédard, Kools, and George (2023) examined and analyzed the factors influencing teachers' perceptions of a learning organization. These factors include an inquiry culture, a shared vision, leadership development, challenges in professional growth, and teamwork. The study's findings indicate that teacher efficacy is positively correlated with all these factors that shape perceptions of a learning organization. Additionally, organizational learning was found to significantly impact teachers' individual and collective beliefs in their efficacy (Dellinger & Marie, 2001). Based on these results, a hypothesis is proposed regarding the relationship between organizational learning and teacher efficacy.

*H<sub>1</sub>: Chinese kindergarten teachers' perceptions of organizational learning have a significant positive impact on teacher efficacy.*

### *2.5. Teacher Efficacy and Pre-School Teachers' Professional Development*

Teacher efficacy not only shapes teachers' teaching behaviors and methods but also influences students' academic performance and teachers' personal growth (Hussain, Khan, & Bidar, 2022). Teachers with an elevated level of efficacy are inclined to engage in activities that enhance their professional development (Wang, 2024). Kim et al. (2016) studied 266 preschool teachers in South Korea and observed that teacher efficacy was significantly linked to professional cognition, and personal efficacy exerted an influence on curriculum implementation. The factors together explained 73% of the variance in the implementation of the early childhood curriculum, indicating that enhancing teachers' efficacy can improve the quality of preschool education. Drawing upon a questionnaire survey of 1,297 teachers in China, Lin, Yin, and Liu (2022) found that teacher efficacy had a notable and active influence on two dimensions of their professional development: their professional attitude and their implementation of optimal teaching strategies. Based on this, it is hypothesized that teacher efficacy positively influences teachers' professional development, leading to the formulation of the following hypothesis.

*H<sub>2</sub>: Chinese kindergarten teachers' efficacy has a significant positive impact on their professional development.*

### *2.6. Mediating Role of Teacher Efficacy*

According to the andragogy education theory, adult learning is typically driven by personal or organizational motives rather than external coercion (Knowles, Holton III, & Swanson, 2014). As adult learners, kindergarten teachers' perceptions of organizational learning not only influence their attitudes toward work and the learning environment but also stimulate their intrinsic motivation for professional growth (Long, Li, Huang, & Fu, 2024). When teachers perceive that the organization supports them through resources, collaboration, and learning opportunities, they develop a stronger sense of efficacy, which refers to their belief in their ability to succeed in teaching by enhancing their professional development (Jiao, Qian, & Liu, 2022). Organizational perceptions of learning provide external conditions for teachers, while teacher efficacy transforms these external conditions into internal driving forces, thereby mediating the relationship between organizational perceptions of learning and teachers' professional development (Anderson & Olivier, 2022). This explanation aligns with the concept of "learners' self-direction" emphasized in adult education, which reflects the process by which individuals achieve continuous professional growth by enhancing their efficacy with organizational support (Peno, 2024). Huang et al. (2020) also observed that organizational conditions in schools can positively impact teacher efficacy, which further influences teachers' initiative to participate in professional development. Meanwhile, teacher efficacy has been verified to play an intermediary role in the relationship between the organizational learning atmosphere in kindergartens and teachers' professional development (Jang & Kim, 2024). In summary, teacher efficacy is a crucial factor in fostering teachers' professional development by serving as a key mediator between organizational learning and development environments. Therefore, the following hypothesis is proposed.

*H<sub>3</sub>: Chinese kindergarten teachers' efficacy mediates the relationship between their perception of organizational learning and professional development.*

## **3. RESEARCH METHODOLOGY**

### *3.1. Research Framework*

The objective of this study is to investigate the professional development of Chinese kindergarten teachers, focusing on their perceptions of organizational learning and teacher efficacy. The research model presented in Figure 1 is proposed for the study, along with analyses of differences in the professional development of early childhood

teachers based on their individual characteristics, such as age, teaching experience, educational background, and type of kindergarten. Accordingly, the research hypotheses of this study are presented in Table 1.

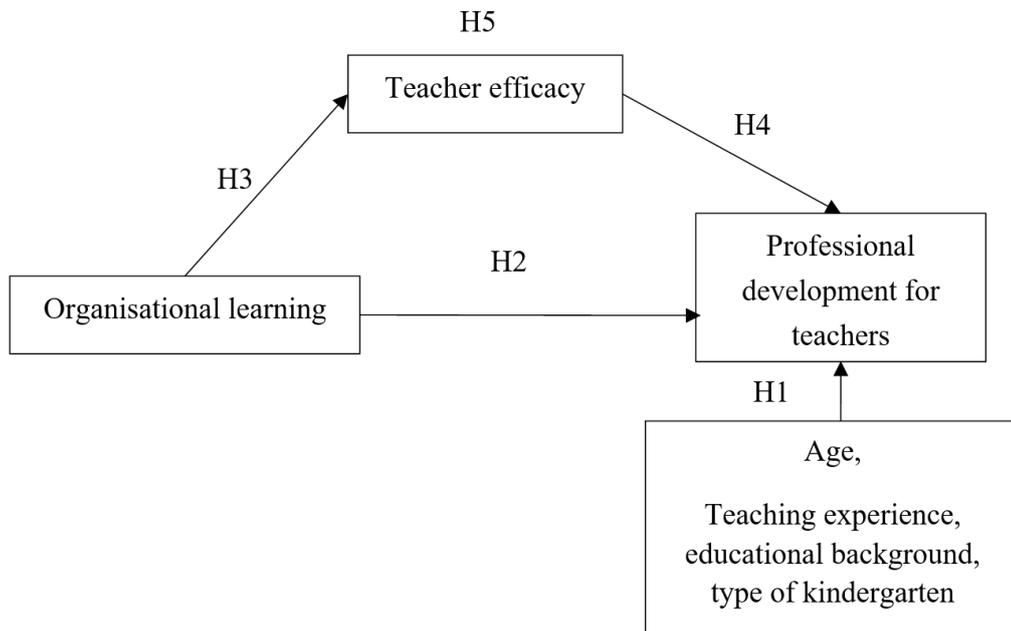


Figure 1. Research framework diagram.

Table 1. Summary of research hypotheses.

Hypothesis	Statement
H1a	Significant differences exist in the professional development of Chinese kindergarten teachers based on age.
H1b	Significant differences are present in the professional development of Chinese kindergarten teachers based on teaching experience.
H1c	Significant differences exist in the professional development of Chinese kindergarten teachers based on their educational backgrounds.
H1d	Significant differences are present in the professional development of Chinese kindergarten teachers based on the type of kindergarten.
H2	Chinese kindergarten teachers' perceptions of organizational learning have a significant positive impact on professional development.
H3	Chinese kindergarten teachers' perceptions of organizational learning have a significant positive impact on teacher efficacy.
H4	Chinese kindergarten teachers' efficacy has a significant positive impact on their professional development.
H5	Chinese kindergarten teachers' efficacy mediates the relationship between their perception of organizational learning and professional development.

### 3.2. Research Participants

The participants in this study consisted of full-time teachers from both public and private kindergartens in Jinan, Shandong Province, China, recruited through convenience sampling. Data were collected using a quantitative questionnaire survey, which all participants voluntarily completed.

Before administering the survey, the researcher explained the purpose and content of the study to all participants and informed them of their right to withdraw at any time without facing any negative consequences. The survey was conducted confidentially to protect participants' privacy, and the collected data was used solely for analytical and scholarly purposes in this study. None of the data was individually identifiable, and it was securely stored and managed to ensure confidentiality.

### 3.3. Data Collection

This study conducted a two-phase data collection using the online platform Wenjuanxing. The first phase was a pilot test aimed at assessing the reliability and validity of the data collection process. During the pilot test, 150 questionnaires were collected from kindergarten teachers, including 94 from public kindergartens (62.67%) and 56 from private kindergartens (37.33%). A total of 139 valid responses were used as pilot data.

The second method was a formal questionnaire survey, which collected data for the main analysis. A total of 600 questionnaires were distributed, and 553 valid responses were obtained after excluding 47 invalid responses. Among the respondents, 355 (64.20%) worked in public kindergartens, while 198 (35.80%) were from private kindergartens.

### 3.4. Research Tools

#### 3.4.1. Perception of Organisational Learning Scale

The organizational learning scale developed by Jerez-Gomez, Céspedes-Lorente, and Valle-Cabrera (2005) was utilized in this study. It comprises four dimensions and a total of 16 items: Management commitment (5 items), systemic perspective (3 items), openness and experimentation (4 items), and knowledge transfer and integration (4 items). A 5-point Likert scale was used for assessment, ranging from 1 (Strongly disagree) to 5 (Strongly agree). Since the participants in this research were pre-school teachers, the original scale items' terms "company" and "employee" were replaced with "pre-school" and "teacher," respectively, to ensure relevance and clarity for the respondents.

The organizational learning scale used in this study was originally in English and underwent expert back-translation in February 2025 to ensure clarity and accuracy (DeWalt, Rothrock, Yount, & Stone, 2007). Two experts with backgrounds in English and educational management reviewed the translation, and all 16 items were retained after resolving any discrepancies.

No items were deleted. The aggregate Cronbach's Alpha coefficient was 0.923. The scale demonstrated good structural validity ( $\chi^2/df = 1.260$ , RMSEA = 0.022). Furthermore, the factor loadings for each dimension ranged from 0.731 to 0.831. The construct reliability (CR) scores were 0.880, 0.800, 0.861, and 0.852. The average variance extracted (AVE) values were 0.595, 0.571, 0.607, and 0.591, respectively.

#### 3.4.2. Teacher Efficacy Scale

The teacher efficacy scale for kindergarten teachers, developed by Guo, Wang, Xu, Gao, and Yang (2025), used in this study, comprises five dimensions and 22 items: teaching preparation efficacy (5 items), teaching strategy efficacy (5 items), teaching evaluation efficacy (4 items), classroom management efficacy (4 items), and home-school cooperation efficacy (4 items). A 5-point Likert scale was used as the scoring system, where 1 indicates fully inconsistent, 2 indicates basically inconsistent, 3 indicates uncertain, 4 indicates basically consistent, and 5 indicates fully consistent. The overall Cronbach's Alpha coefficient was 0.940. The scale demonstrated strong structural validity ( $\chi^2/df = 1.761$ , RMSEA = 0.037). Additionally, the factor loadings for each dimension ranged between 0.706 and 0.837. The CR assessment scores were 0.891, 0.874, 0.859, 0.858, and 0.859. The AVE values were 0.620, 0.580, 0.604, 0.602, and 0.605, respectively.

#### 3.4.3. Pre-School Teachers' Professional Development Scale

The professional development self-assessment scale for kindergarten teachers, developed by Wu (2021), used in this study, comprises three dimensions and 34 items: Professional Knowledge (12 items), Professional Practice (14 items), and Professional Commitment (8 items). A 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), was applied. The overall Cronbach's Alpha coefficient was .963, indicating excellent internal consistency. The scale demonstrated good structural validity, with a chi-square to degrees of freedom ratio ( $\chi^2/df$ ) of 1.634 and a RMSEA of 0.034. Additionally, the factor loadings for each dimension ranged from 0.717 to 0.808,

reflecting strong construct validity. The Composite Reliability (CR) scores were 0.942, 0.952, and 0.919 for the respective dimensions, indicating high reliability. The Average Variance Extracted (AVE) values were 0.576, 0.584, and 0.585, respectively, supporting the convergent validity of the scale.

### 3.5. Pilot Test Results

A pilot test was conducted to assess the reliability and validity of the questionnaire in China. For the Perception of Organisational Learning Scale, the KMO value was 0.953, and Bartlett's test value was 2209.839 ( $p < 0.001$ ). Furthermore, the total variance explained was 72.034%. The Cronbach's alpha coefficient for the entire scale was 0.951, with four dimensions ranging from 0.824 to 0.872. Regarding the Teacher Efficacy Scale, the KMO value was 0.977, and Bartlett's test value was 4584.254 ( $p < 0.001$ ). The total variance explained was 79.371%. The Cronbach's alpha coefficient for the entire scale was 0.974, with subdimensions ranging from 0.863 to 0.898. Finally, for the Preschool Teacher Professional Development Scale, the KMO value was 0.964, and Bartlett's test value was 7707.837 ( $p < 0.001$ ). The total variance explained was 72.606%. The Cronbach's alpha coefficient for the overall scale was 0.982, with subdimensions ranging from 0.935 to 0.960. Overall, the pilot test indicated that the questionnaire demonstrated strong reliability and validity.

## 4. RESEARCH RESULTS

### 4.1. Descriptive statistics

Of the 553 kindergarten teachers who participated in this study, 355 (64.20%) worked in public kindergartens, while 198 (35.80%) worked in private ones. Among these teachers, 222 (40.15%) held a junior college degree, and 238 (43.04%) possessed a bachelor's degree. Table 2 presents additional details.

**Table 2.** Basic demographic information table.

Variable	Category	Number	Percentage
Age	18-25	100	18.083%
	26-33	204	36.890%
	34-41	132	23.870%
	42-49	66	11.935%
	50 and above	51	9.222%
Education	Secondary vocational school and below	93	16.817%
	Junior college	222	40.145%
	Bachelor's degree and above	238	43.038%
Teaching experience	Less than one year	30	5.425%
	1-3 years	106	19.168%
	4-6 years	119	21.519%
	7-10 years	185	33.454%
	More than 10 years	113	20.434%
Type of Kindergarten	Public kindergarten	355	64.195%
	Private kindergarten	198	35.805%

### 4.2. Common Method Bias Test

The data was subjected to Harman's single-factor test as part of a common method bias analysis to ensure scientific rigor. A total of 12 factors with eigenvalues greater than 1 were identified. The variance explained by the first extracted factor was 32.071%, which is below the 40% threshold, indicating that this study does not exhibit significant common method bias.

### 4.3. Confirmatory Factor Analysis

The analysis of the scale's validity indicated that the overall chi-square divided by degrees of freedom ( $\chi^2/df$ ) was 1.094, which is below the threshold of 5. GFI was 0.984, and AGFI was 0.975; both values exceed the acceptable

cutoff of 0.900. SRMR was 0.021, and RMSEA was 0.013, with both indices falling below the maximum acceptable value of 0.080. Additionally, NFI was 0.981, RFI was 0.976, CFI was 0.998, and IFI was 0.998; all these indices surpass the standard threshold of 0.900. PNFI was 0.758, and PGFI was 0.643, both exceeding the minimum criterion of 0.050. Based on these fit indices, it can be concluded that the model demonstrates excellent fit and strong structural validity, indicating that the scale is a reliable measure within this study context.

The analytical results of the factor loadings for the overall scale are presented in Table 3. Hair, Anderson, Tatham, and Black (1998) recommended that the composite reliability (CR) of the structural equation should exceed 0.700, while Fornell and Larcker (1981) suggested that the average variance extracted (AVE) should be above 0.500. Based on these criteria, the convergent validity of the scale can be considered satisfactory. The factor loadings, composite reliability, and average variance extracted values presented in this table all meet the established standards; therefore, it can be concluded that the questionnaire scale used in this study demonstrates high convergent validity, reliability, and overall validity. The results indicate that the scale effectively differentiates among respondents and exhibits high measurement accuracy and credibility. Table 3 provides detailed data supporting these findings.

Table 3. Overall factor loading analysis.

Scale	Dimension	Factor loading	CR	AVE
Perception of organizational learning	Management commitment	0.761	0.833	0.556
	System perspective	0.728		
	Openness and experimentation	0.734		
	Knowledge transfer and integration	0.758		
Teacher efficacy	Teaching preparation	0.773	0.860	0.552
	Teaching strategy	0.752		
	Teaching evaluation	0.708		
	Classroom management	0.747		
	Home-school cooperation	0.734		
Professional development	Professional knowledge	0.767	0.806	0.581
	Professional Practice	0.793		
	Professional passion	0.725		

4.4. Differences Analysis

The various aspects of professional development among teachers of different ages, educational backgrounds, teaching experiences, and types of kindergartens were examined using independent sample t-tests and a one-way ANOVA to test hypothesis H1 of the study. The results indicated significant differences in professional development based on age ( $p < .010$ ). A Scheffe's post-hoc test revealed that teachers aged 50 and above demonstrated significantly greater professional development compared to those aged 18-25. However, no significant differences were observed among other age groups. Table 4 provides further details.

Table 4. Differences analyzed by age.

Group	Number of participants	M	SD	F	p	Post Hoc Comparison
18-25	100	3.146	0.705	3.401	0.009	5 > 1
26-33	204	3.288	0.694			
34-41	132	3.323	0.750			
42-49	66	3.251	0.647			
50 and above	51	3.578	0.579			

Note: 1=Group 18-25; 5=Group 50 and above.

Notable differences were observed regarding the professional development of teachers with different educational backgrounds ( $p < .001$ ). According to the results of Scheffe's post-hoc comparison test, the professional development of teachers with junior college degrees was higher than that of those with a secondary vocational school degree or lower. Additionally, teachers with a bachelor's degree or higher demonstrated greater professional development than

those with a secondary vocational school degree or lower, and also greater than those with a junior college degree. Table 5 presents the detailed results.

**Table 5.** Analysis of differences by educational qualifications.

Group	Number of participants	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	Post hoc Comparisons
Secondary vocational school or below	93	3.016	0.812	12.485	0.000	2>1
Junior college	222	3.263	0.682			3>1
Bachelor's degree or above	238	3.430	0.636			3>2

**Note:** 1=Secondary vocational school or below; 2=Junior college; 3=Bachelor's degree or above.

Notable differences were observed in the professional development of teachers with varying lengths of teaching experience ( $p < 0.050$ ). According to the results of the post-hoc comparison using Scheffe's test, teachers with 10 or more years of teaching experience demonstrated significantly better professional development than those with less than one year of experience. Table 6 presents the detailed data.

**Table 6.** Analysis of differences based on teaching experience.

Group	Number of Participants	<i>M</i>	<i>SD</i>	<i>F</i>	<i>p</i>	Post hoc comparison
Less than 1 year	30	2.965	0.770	2.738	0.028	5 > 1
1-3 years	106	3.264	0.633			
4-6 years	119	3.244	0.718			
7-10 years	185	3.323	0.740			
More than 10 years	113	3.409	0.634			

**Note:** 1=Less than 1 year; 5=More than 10 years.

Significant differences were observed regarding the professional development of teachers in public and private kindergartens ( $p < 0.001$ ). Teachers from private kindergartens were found to perform better than those from public ones. Therefore, hypothesis 1 (H1) was confirmed. Table 7 presents the detailed data.

**Table 7.** Analysis of differences by kindergarten type.

Group	Number of participants	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	Difference comparison
Public kindergartens	355	3.230	0.724	-2.830	0.005	2>1
Private kindergartens	198	3.405	0.644			

**Note:** 1=Public kindergartens; 2=Private kindergartens.

#### 4.5. Correlation Analysis

The current study examined the relationships among perceptions of organizational learning, teacher efficacy, and professional development. The statistical results are presented in Table 8. The findings indicated that perceptions of organizational learning were significantly and positively correlated with teacher efficacy ( $r = 0.624$ ,  $p = 0.000$ ) and with professional development ( $r = 0.508$ ,  $p = 0.000$ ).

Additionally, teacher efficacy was significantly and positively correlated with professional development ( $r = 0.516$ ,  $p = 0.000$ ). The correlation coefficients among these variables ranged from 0.508 to 0.624, and none exceeded 0.800, suggesting that multicollinearity was not an issue. Table 8 provides further details on these relationships.

Table 8. Correlation analysis table.

Variables	M	SD	Organizational learning perception	Teacher efficacy	Kindergarten teacher professional development
Organizational learning perception	3.308	0.703	1		
Teacher efficacy	3.255	0.703	0.624***	1	
Kindergarten teacher professional development	3.293	0.701	0.508***	0.516***	1

Note: \*\*\*p < 0.001.

4.6. Structural Equation Model Analysis

As shown in Figure 2, the standardized path coefficient of organisational learning perception on professional development was 0.358 (p < 0.001), demonstrating that teachers' perception of organisational learning has a significant and positive impact on their professional development. This indicates that the stronger their perception of organisational learning, the higher their level of professional development. Therefore, H2 is supported.

The standardized path coefficient of organizational learning perception on teacher efficacy was 0.735 (p < 0.001), indicating that organizational learning perception exerts a significant and positive influence on teacher efficacy. This means that the stronger their perception of organizational learning, the higher their teacher efficacy. Therefore, H3 is supported.

The standardized path coefficient of teacher efficacy on teachers' professional development was 0.353 (p < 0.001), indicating that teacher efficacy has a significant and positive impact on their professional development. This suggests that higher levels of teacher efficacy are associated with greater professional development. Therefore, hypothesis H4 is supported.

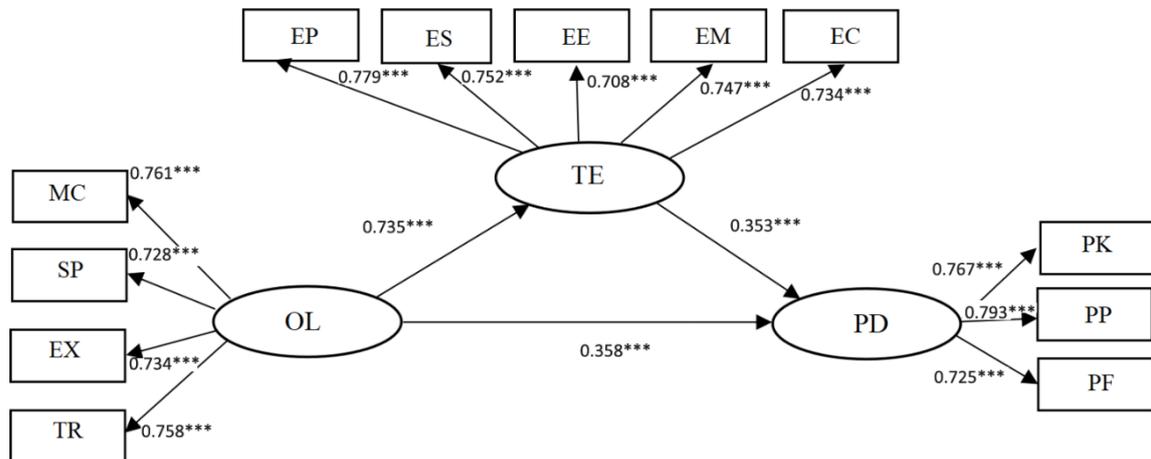


Figure 2. Structural equation model.

Note: OL= Organisational learning; MC= Management commitment; SP= Systemic perspective; EX=openness and experimentation, TR= Knowledge transfer and integration; TE= Teacher efficacy; EP= Teaching preparation; ES= Teaching strategy; EE= Teaching evaluation; EM= Classroom management; EC= Home-school cooperation; PD= Professional development; PK= Professional knowledge; PP= Professional practice; PF= Professional passion. \*\*\*p < 0.001.

4.7. Bootstrap Analysis of Mediating Effect

The suggestion by Preacher and Hayes (2008) was adopted in this study to investigate the stability of the mediation effect. This involved using the bootstrap method, with the sample resampled 5,000 times to calculate the 95% confidence interval of the mediation effect coefficient.

As shown in Table 9, the results of the test confirmed the direct effect of perceived organizational learning on professional development, with a path effect value of 0.358 and a 95% confidence interval of [0.196, 0.496]. Additionally, perceived organizational learning also demonstrated a significant direct effect on teacher efficacy, with

a path effect value of 0.735 and a 95% confidence interval of [0.632, 0.771]. Teacher efficacy had a direct effect on professional development, with a path effect value of 0.353 and a 95% confidence interval of [0.185, 0.450]. The indirect path effect of perceived organizational learning  $\rightarrow$  teacher efficacy  $\rightarrow$  professional development was 0.259, with a 95% confidence interval of [0.159, 0.390], which does not include zero. This indicates that teacher efficacy mediates the relationship between perceived organizational learning and professional development. Therefore, hypothesis 5 is supported.

**Table 9.** Mediation Effect Analysis Table.

Item	Path	Estimate value	95% confidence interval	
			Lower limit	Upper limit
Direct Effect	OL $\rightarrow$ PD	0.358	0.196	0.496
	OL $\rightarrow$ TE	0.735	0.632	0.771
	TE $\rightarrow$ PD	0.353	0.185	0.450
Indirect effect	OL $\rightarrow$ TE $\rightarrow$ PD	0.259	0.159	0.390
Total effect	OL $\rightarrow$ PD	0.618	0.537	0.687

**Note:** OL= Organisational learning; TE= Teacher efficacy; PD= Professional development.

## 5. DISCUSSION

### 5.1. Different Professional Development Based on Kindergarten Type

Teachers in private kindergartens also demonstrate higher levels of professional development compared to their counterparts in public kindergartens. This difference may be attributed to the greater emphasis that private kindergartens place on training and resource support. Similar findings are reported by Bacus and Macalisang (2024), who concluded that teachers in public and private kindergartens have different professional development needs and capabilities. Consequently, this study further highlights the advantages of private kindergartens for teachers, particularly regarding incentive mechanisms and development opportunities.

### 5.2. Different Professional Development of Kindergarten Teachers Based on Age, Education and Teaching Experience

The scores of teachers aged 50 and above were notably higher than those in the 18-25 age group, demonstrating that teachers place greater emphasis on professional competence and career sustainability as they age. Meke and Rembe (2013) also pointed out that age is a crucial determinant in shaping the trajectory of professional development.

Furthermore, the scores of teachers who obtained a bachelor's degree or higher were significantly higher than those of teachers with secondary vocational education or college diplomas. Douglas and Tim (2011) noted that highly qualified teachers possess stronger knowledge reserves and learning capabilities; therefore, they demonstrate more prominent professional skills. Consequently, this study further confirms the vital role of teachers' educational backgrounds in their professional development.

Regarding various durations of teaching experience, teachers with over 10 years of experience demonstrated greater levels of professional development than those with less than one year of experience. This supports the idea that teaching experience is an important resource for career development and that long-term professional accumulation contributes to fostering teachers' growth (Visković & Višnjić Jevtić, 2018).

### 5.3. Positive Impact of Teachers' Organisational Learning Perception on Professional Development

The growth of teachers is promoted by an organizational learning environment in which the sharing of knowledge is encouraged, as well as team reflection and the exchange of experiences. Lemus and Saavedra (2024) noted that their perception of organizational learning helps teachers to proactively seek knowledge and enhance their capabilities. Prior to that, Collinson and Cook (2006) emphasized its role in promoting teaching reflection and improvement. Therefore, kindergartens should foster a learning culture based on regular teaching research activities

and knowledge-sharing platforms to strengthen teachers' professional support and facilitate their further development.

#### *5.4. Positive Impact of Organisational Learning Perception on Teacher Efficacy*

As Zheng et al. (2021) pointed out earlier, organizational learning provides teachers with resources and support, enabling them to face challenges with greater confidence. Organizational learning promotes the continuous improvement of teaching practices, thereby enhancing teacher efficacy (Gouédard et al., 2023). A positive organizational atmosphere shapes teachers' beliefs and encourages greater engagement with teaching and professional growth.

#### *5.5. Positive Impact of Teacher Efficacy on Teachers' Professional Development*

It was confirmed in this study that teacher efficacy is a key driver of teachers' professional development. It has also been found from the TALIS international survey that teachers with high efficacy are more inclined to implement innovative teaching strategies and to iteratively improve their practices (Chen, Lin, Hsueh, & Hsieh, 2020). Barni, Danioni, and Benevene (2019) pointed out that teacher efficacy enhances educators' ability to address teaching challenges and increases their motivation for growth, encouraging active participation in innovative and professional activities. Therefore, this study emphasizes the need for training programs to incorporate classroom management simulations along with student engagement strategies to strengthen the transformation of efficacy into teaching behavior.

#### *5.6. Mediating Role of Teacher Efficacy Between Organisational Learning Perception and Professional Development*

Teacher efficacy has been established as a vital intermediary between perceptions of organizational learning and professional development. Teachers' perceptions of organizational learning enhance their confidence and innovative consciousness, thereby indirectly promoting their professional growth (Huang et al., 2020; Jang & Kim, 2024). This study further validates that teachers' perceptions of organizational learning provide them with resources and experience, boosting their efficacy. This increased efficacy, in turn, encourages continuous reflection and teaching improvement, ultimately leading to further professional development. These findings highlight the dual role of perceived organizational learning and teacher efficacy in promoting the professional development of kindergarten teachers.

## **6. CONCLUSION**

This study was based on exploring the mechanism by which kindergarten teachers' perceptions of organizational learning affect their professional development, mediated by teacher efficacy. The primary data were gathered from 553 kindergarten teachers in Jinan, Shandong Province, China, using a questionnaire survey method. According to the results, the teachers' perceptions of organizational learning, teacher efficacy, and overall professional development were relatively high, although there is still room for improvement. The perception of organizational learning aligns with the needs of adult learners, such as being problem-centered, integrating experience, self-directed, and emphasizing immediate application. These factors stimulate teacher efficacy, promote teachers' growth in knowledge, practice, and sentiment, and verify the applicability of adult education theory in the realm of early childhood education (Knowles, 1984).

Teachers in private kindergartens demonstrated higher levels of professional development compared to those in public kindergartens. Teachers aged 50 and above significantly outperformed those in the 18-25 age group. Teachers possessing a bachelor's degree or higher significantly outperformed those with a secondary vocational school or junior college degree. The development level of teachers with over 10 years of teaching experience was significantly greater than that of those with less than 1 year of experience. Additionally, structural equation analysis indicated that their

perception of organizational learning has a notable and active effect on teachers' professional development. Simultaneously, it indirectly influences their professional growth by enhancing teachers' efficacy, which is a critical mediating variable through which teachers' development is affected by the organizational environment.

## 7. RESEARCH CONTRIBUTIONS

The positive effect of perceived organizational learning on teacher efficacy was confirmed in this study, thereby providing practical guidance for kindergarten administrators in designing organizational learning environments, building teachers' learning communities, and supporting teachers' reflection and professional growth.

Furthermore, this study validated that enhancing teachers' self-efficacy not only improves their job satisfaction and professional competence but also promotes their ongoing development (Jiao et al., 2022). Therefore, kindergarten administrators should focus on cultivating teachers' self-efficacy by providing operational support, training, and opportunities for reflection to enhance their professional capabilities and sense of career identity (Qiao et al., 2022). This approach will offer operational intervention pathways for kindergarten administrators by leveraging their management commitment within a systemic perspective. By demonstrating openness and initiative in the transfer and integration of knowledge, they can activate teachers' intrinsic motivation without the need to increase staffing or funding.

Furthermore, it was also found in this study that factors such as age, educational background, length of teaching experience, and type of kindergarten exert a notable impact on teachers' professional development. This suggests that administrators should consider the varied needs of teachers with different backgrounds and cultivate more targeted professional development strategies to enhance the overall professional level of the kindergarten teaching workforce. It also provides data to support teacher training institutions in designing precise, stratified training programmes tailored to age, educational level, and experience, thereby avoiding the inefficiencies associated with one-size-fits-all training.

## 8. RESEARCH LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

In this study, self-assessed questionnaires were utilized to gather data from kindergarten teachers, which could lead to certain subjective biases in the responses, as they may answer based on social expectations or personal impressions. Future researchers could overcome this limitation by employing multiple data collection methods, such as incorporating evaluations from the principal or direct supervisors as objective indicators.

Another limitation is that the organizational learning scale used in this study consisted of four dimensions: management commitment, systemic perspective, openness and experimentation, as well as knowledge transfer and integration. However, in the empirical analysis, the entire scale was included in the model for testing instead of conducting in-depth discussions on the specific effects of each dimension on teachers' professional development and teacher efficacy. These dimensions could be explored individually in future studies to derive more nuanced and detailed insights.

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**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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**Disclosure of AI Use:** The author used AI tools for grammar correction and stylistic adjustments to improve readability. All content has been reviewed and verified by the author.

## REFERENCES

- Alavi, S., Abdul Wahab, D., Muhamad, N., & Arbab Shirani, B. (2014). Organic structure and organisational learning as the main antecedents of workforce agility. *International Journal of Production Research*, 52(21), 6273-6295. <https://doi.org/10.1080/00207543.2014.919420>
- Alerasoul, S. A., Afeltra, G., Hakala, H., Minelli, E., & Strozzi, F. (2022). Organisational learning, learning organisation, and learning orientation: An integrative review and framework. *Human Resource Management Review*, 32(3), 100854. <https://doi.org/10.1016/j.hrmr.2021.100854>
- Anderson, S. G., & Olivier, D. F. (2022). A quantitative study of schools as learning organizations: An examination of professional learning communities, teacher self-efficacy, and collective efficacy. *Research Issues in Contemporary Education*, 7(1), 26-51.
- Andersson, C., & Palm, T. (2017). Characteristics of improved formative assessment practice. *Education Inquiry*, 8(2), 104-122. <https://doi.org/10.1080/20004508.2016.1275185>
- Asbari, M. (2024). The influence of hard skills, organizational learning and soft skills on teacher innovation capability during digital era. *Professional Education Studies and Operations Research*, 1(2), 33-45.
- Bacus, L. V., & Macalisang, D. S. (2024). Teachers' perceived level of professional development and competencies in handling kindergarten pupils: The case of public and private schools of Ozamis City Division. *Social Science and Humanities Journal*, 8(4), 34783-34794. <https://doi.org/10.18535/sshj.v8i04.998>
- Ballenas, G. J., Tidong, Y. P., Granaderos, R. D., & Tagadiad, J. V. (2023). Research culture and organizational learning on professional development of secondary teachers. *American Journal of Educational Research*, 11(9), 580-593. <https://doi.org/10.12691/education-11-9-7>
- Barni, D., Danioni, F., & Benevene, P. (2019). Teachers' self-efficacy: The role of personal values and motivations for teaching. *Frontiers in Psychology*, 10, 1645. <https://doi.org/10.3389/fpsyg.2019.01645>
- Beisly, A. H., & Lake, V. E. (2021). Knowledge of child development: Associations among pre-service teachers' level of education and work experience. *Journal of Early Childhood Research*, 19(2), 195-210. <https://doi.org/10.1177/1476718X20942948>
- Bellibaş, M. Ş., Gümüş, S., & Kılınç, A. Ç. (2020). Principals supporting teacher leadership: The effects of learning-centred leadership on teacher leadership practices with the mediating role of teacher agency. *European Journal of Education*, 55(2), 200-216. <https://doi.org/10.1111/ejed.12387>
- Buhagiar, K., & Anand, A. (2023). Synergistic triad of crisis management: Leadership, knowledge management and organizational learning. *International Journal of Organizational Analysis*, 31(2), 412-429. <https://doi.org/10.1108/IJOA-03-2021-2672>
- Chen, R. J.-C., Lin, H.-C., Hsueh, Y.-L., & Hsieh, C.-C. (2020). Which is more influential on teaching practice, classroom management efficacy or instruction efficacy? Evidence from TALIS 2018. *Asia Pacific Education Review*, 21(4), 589-599. <https://doi.org/10.1007/s12564-020-09656-8>
- Choi, J., & Kang, W. (2019). Sustainability of cooperative professional development: Focused on teachers' efficacy. *Sustainability*, 11(3), 585. <https://doi.org/10.3390/su11030585>
- Clotfelter, C. T., Ladd, H. F., & Vigdor, J. L. (2007). Teacher credentials and student achievement: Longitudinal analysis with student fixed effects. *Economics of Education Review*, 26(6), 673-682. <https://doi.org/10.1016/j.econedurev.2007.10.002>
- Collinson, V., & Cook, T. F. (2006). *Organizational learning: Improving learning, teaching, and leading in school systems*. Thousand Oaks, CA: SAGE Publications.
- Dellinger, A., & Marie, B. (2001). A study of the measurement and sources of teachers' self and collective efficacy beliefs in professional learning environments. Doctoral Dissertation, Louisiana State University. LSU Historical Dissertations and Theses.
- Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, 38(3), 181-199. <https://doi.org/10.3102/0013189X08331140>
- DeWalt, D. A., Rothrock, N., Yount, S., & Stone, A. A. (2007). Evaluation of item candidates: The PROMIS qualitative item review. *Medical Care*, 45(5 Suppl. 1), S12-S21. <https://doi.org/10.1097/01.mlr.0000254567.79743.e2>

- Douglas, N. H., & Tim, R. S. (2011). Teacher training, teacher quality and student achievement. *Journal of Public Economics*, 95(7-8), 798-812.
- Edwards-Fapohunda, D. M. O. (2024). The role of adult learning and education in community development: A case study of New York. *Iconic Research and Engineering Journals*, 8(1), 437-454.
- Finger, M., & Brand, S. B. (1999). The concept of the "learning organization" applied the transformation of the public sector: Conceptual contributions for theory development, In M. E. Smith, J. Burgoyne & L. Araujo (Eds.) *Organizational learning and the learning organization: Developments in theory and practice*. In (pp. 130-156). London, UK: SAGE Publications.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Franz, J. (2013). Didactic action in organizations of general adult education. *Magazin Erwachsenenbildung*, 34(20), 79-83.
- González-Motos, S., & Saurí Saula, E. (2023). State nurseries are not for us: The limitations of early childhood policies beyond price barriers in Barcelona. *International Journal of Early Childhood*, 55(2), 295-312. <https://doi.org/10.1007/s13158-022-00343-w>
- Gordon, D., Blundell, C., Mills, R., & Bourke, T. (2023). Teacher self-efficacy and reform: A systematic literature review. *The Australian Educational Researcher*, 50(3), 801-821. <https://doi.org/10.1007/s13384-022-00526-3>
- Gouédard, P., Kools, M., & George, B. (2023). The impact of schools as learning organisations on teachers' self-efficacy and job satisfaction: A cross-country analysis. *School Effectiveness and School Improvement*, 34(3), 331-357. <https://doi.org/10.1080/09243453.2023.2196081>
- Grund, J., Singer-Brodowski, M., & Buessing, A. G. (2024). Emotions and transformative learning for sustainability: A systematic review. *Sustainability Science*, 19(1), 307-324. <https://doi.org/10.1007/s11625-023-01439-5>
- Guo, Y., Wang, C., Xu, J., Gao, R., & Yang, Y. (2025). Preschool teachers' sense of teaching efficacy: Scale development and validation. *Asia Pacific Journal of Education*, 1-18. <https://doi.org/10.1080/02188791.2025.2452604>
- Hair, J. F. J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice-Hall.
- Hauge, K. (2019). Teachers' collective professional development in school: A review study. *Cogent Education*, 6(1), 1619223. <https://doi.org/10.1080/2331186X.2019.1619223>
- Huang, L., Zhang, T., & Huang, Y. (2020). Effects of school organizational conditions on teacher professional learning in China: The mediating role of teacher self-efficacy. *Studies in Educational Evaluation*, 66, 100893. <https://doi.org/10.1016/j.stueduc.2020.100893>
- Hussain, M. S., Khan, S. A., & Bidar, M. (2022). Self-efficacy of teachers: A review of the literature. *Multi-Disciplinary Research Journal*, 10(1), 110-116.
- Jang, S., & Kim, M. (2024). The effect of early childhood teachers' job satisfaction on teacher-child interactions: The moderated mediating effect of teacher efficacy and resilience. *Asia-Pacific Journal of Research in Early Childhood Education*, 18(1), 107.
- Jerez-Gomez, P., Céspedes-Lorente, J., & Valle-Cabrera, R. (2005). Organizational learning capability: A proposal of measurement. *Journal of Business Research*, 58(6), 715-725. <https://doi.org/10.1016/j.jbusres.2003.11.002>
- Jiang, Y., & Zheng, C. (2021). New methods to support effective collaborative reflection among kindergarten teachers: An action research approach. *Early Childhood Education Journal*, 49(2), 247-258. <https://doi.org/10.1007/s10643-020-01064-2>
- Jiao, C., Qian, J., & Liu, H. (2022). The relationship between preschool inclusive education teachers' organizational support and work engagement: The mediating role of teacher self-efficacy. *Frontiers in Psychology*, 13, 900835. <https://doi.org/10.3389/fpsyg.2022.900835>
- Kala, N., & Sungur-Alhan, S. (2023). From professional knowledge to practice: The effect of academic counseling model based on academic-teacher collaboration on pedagogical content knowledge. *Science Education International*, 34(4), 312-322. <https://doi.org/10.33828/sei.v34.i4>

- Kim, M. S., Shin, Y. S., & Chae, E. W. (2016). Effects of nursing teacher's efficacy and professionalism on childhood curriculum performance. *Korean Journal of Child Studies*, 37(2), 43-56. <https://doi.org/10.5723/kjcs.2016.37.2.43>
- Knowles, M. S. (1984). New roles for teachers-empowerers of lifelong learners. *Journal of Children in Contemporary Society*, 16(3-4), 85-94. [https://doi.org/10.1300/J274v16n03\\_08](https://doi.org/10.1300/J274v16n03_08)
- Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2014). *The adult learner: The definitive classic in adult education and human resource development*. UK: Routledge.
- Lemus, L. L. A., & Saavedra, L. R. (2024). Communication and organizational learning in teachers of public educational institutions. *International Journal of Instruction*, 17(4), 179-194. <https://doi.org/10.29333/iji.2024.17411a>
- Li, W., Xu, C., & Lu, Y. (2024). Digital teaching reform in higher vocational preschool education: Value logic, practical dilemmas, and promotion paths. *Journal of Higher Continuing Education*, 37(6), 18-21.
- Lin, W., Yin, H., & Liu, Z. (2022). The roles of transformational leadership and growth mindset in teacher professional development: The mediation of teacher self-efficacy. *Sustainability*, 14(11), 6489. <https://doi.org/10.3390/su14116489>
- Long, C., Li, C., Huang, G., & Fu, J. (2024). How to better promote teaching? Unveiling the links between professional learning communities and intrinsic motivation among foreign language teachers. *Heliyon*, 10(16), e36011. <https://doi.org/10.1016/j.heliyon.2024.e36011>
- Mainert, J., Niepel, C., Lans, T., & Greiff, S. (2018). How employees perceive organizational learning: Construct validation of the 25-item short form of the strategic learning assessment map (SF-SLAM). *Journal of Knowledge Management*, 22(1), 57-75. <https://doi.org/10.1108/JKM-11-2016-0494>
- Meke, E. S., & Rembe, S. (2013). An exploration of the effect of teacher attributes on effective implementation of continuing professional development programmes: Evidence from teachers in Zomba rural education district in Malawi and other eclectic data sources. *The Anthropologist*, 15(1), 89-96.
- Ogunkoya, A. (2023). Early childhood education (ECE) in Nigeria: A system analysis of policy in national and local contexts. Doctoral Dissertation, University of East London. University of East London.
- Peno, K. (2024). Self-directed adult learning: Then and now. *New Directions for Adult and Continuing Education*, 2024(184), 14-19. <https://doi.org/10.1002/ace.20547>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. <https://doi.org/10.3758/BRM.40.3.879>
- Qiao, T., Song, Z., Huang, J., Yan, J., Zhang, X., Wang, Y., . . . Wang, Y. (2022). The relationship between pre-service kindergarten teachers' professional identification and career adaptability: A chain mediation model. *Frontiers in Psychology*, 13, 1045947. <https://doi.org/10.3389/fpsyg.2022.1045947>
- Ryan, M., & Hendry, G. D. (2023). Sources of teacher efficacy in teaching reading: Success, sharing, and support. *The Australian Journal of Language and Literacy*, 46(1), 1-14. <https://doi.org/10.1007/s44020-022-00016-0>
- Saini, M., Sengupta, E., Singh, M., Singh, H., & Singh, J. (2023). Sustainable development goal for quality education (SDG 4): A study on SDG 4 to extract the pattern of association among the indicators of SDG 4 employing a genetic algorithm. *Education and Information Technologies*, 28(2), 2031-2069. <https://doi.org/10.1007/s10639-022-11265-4>
- Salih, M. H., Amin, S. S. M., Omer, S. S., Hassan, S. A., & Kamal, S. N. (2023). Assessing the psychological adaptation of kindergarten teachers in Halabja province. *Journal of Philology and Educational Sciences*, 2(2), 19-32. <https://doi.org/10.53898/jpes2023222>
- Schechter, C. (2007). Organizational learning mechanisms: The meaning, measure, and implications for school improvement. *Educational Administration Quarterly*, 44(2), 155-186. <https://doi.org/10.1177/0013161X07312189>
- Seyyed Kalan, S. M., Zirak, R., Azad, R., & Golparvar, B. (2016). Determining the relationship between organizational learning mechanisms and teachers' knowledge sharing behavior and professional development ability. *International Journal of Organizational Leadership*, 5(3), 218-230. <https://doi.org/10.33844/ijol.2016.60191>

- Shoulars, D. P. (2025). Teachers as adult learners: An investigation into various teacher professional development experiences that include the principles of adult learning and its connection to teacher self-efficacy. Doctoral Dissertation, Caldwell University.
- Tam, A. C. F. (2025). Teacher engagement in professional learning communities in preschool contexts. *Teachers and Teaching*, 31(5), 726-746. <https://doi.org/10.1080/13540602.2024.2381042>
- Thommen, D., Grob, U., Lauermaun, F., Klassen, R. M., & Praetorius, A.-K. (2022). Different levels of context-specificity of teacher self-efficacy and their relations with teaching quality. *Frontiers in Psychology*, 13, 857526. <https://doi.org/10.3389/fpsyg.2022.857526>
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783-805. [https://doi.org/10.1016/S0742-051X\(01\)00036-1](https://doi.org/10.1016/S0742-051X(01)00036-1)
- UNESCO. (2016). *Unpacking sustainable development goal 4: Education 2030 guide*. Retrieved from [http://unesdoc.unesco.org/ULis/cgiin/ulis.pl?catno=246300&set=00580D930D\\_3\\_2&pg=0&lin=1&ll=1](http://unesdoc.unesco.org/ULis/cgiin/ulis.pl?catno=246300&set=00580D930D_3_2&pg=0&lin=1&ll=1)
- Visković, I., & Višnjić Jevtić, A. (2018). Professional development of kindergarten teachers in Croatia—a personal choice or an obligation. *Early Years*, 38(3), 286-297. <https://doi.org/10.1080/09575146.2017.1278747>
- Wadel, C. C., & Knaben, Å. D. (2022). Untapped potential for professional learning and development: Kindergarten as a learning organization. *International Journal of Early Childhood*, 54(2), 261-276. <https://doi.org/10.1007/s13158-021-00303-w>
- Wang, Y. (2024). Research on the importance and strategies of cultivating self-efficacy in kindergarten teachers. *Advances in Educational Technology and Psychology*, 8(2), 51-57. <https://doi.org/10.23977/aetp.2024.080208>
- Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems Thinker*, 9(5), 2-3.
- Wu, W. (2021). Development and validation of the self-assessment scale for kindergarten teachers' professional competence. *Educational Science Research*, 23(3), 85-91.
- Yan, Z., & Zhao, S. (2022). The relationship between school-based research and preschool teachers' teaching ability: The mediating role of constructivist beliefs in teaching. *Frontiers in Psychology*, 13, 814521. <https://doi.org/10.3389/fpsyg.2022.814521>
- Yin, H., To, K. H., Keung, C. P. C., & Tam, W. W. Y. (2019). Professional learning communities count: Examining the relationship between faculty trust and teacher professional learning in Hong Kong kindergartens. *Teaching and Teacher Education*, 82, 153-163. <https://doi.org/10.1016/j.tate.2019.03.019>
- Zhang, L. J., Fathi, J., & Naderi, M. (2025). A cross-lagged panel analysis of self-efficacy, teacher grit, teaching enjoyment, and work engagement among foreign language teachers. *Journal of Multilingual and Multicultural Development*, 46(7), 1714-1732. <https://doi.org/10.1080/01434632.2023.2248064>
- Zhang, X., Admiraal, W., & Saab, N. (2021). Teachers' motivation to participate in continuous professional development: Relationship with factors at the personal and school level. *Journal of Education for Teaching*, 47(5), 714-731. <https://doi.org/10.1080/02607476.2021.1942804>
- Zheng, X., Yin, H., & Liu, Y. (2021). Are professional learning communities beneficial for teachers? A multilevel analysis of teacher self-efficacy and commitment in China. *School Effectiveness and School Improvement*, 32(2), 197-217. <https://doi.org/10.1080/09243453.2020.1808484>

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