

# The Relationship between Preschool Teachers' Self-Efficacy and Pedagogical Content Knowledge in Malay Language

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## Abstract

Preschool education serves as a crucial foundation for the development of knowledge and character in children, where the effectiveness of teaching relies on teachers' pedagogical knowledge and their level of self-efficacy. The purpose of this study is to assess the effectiveness of Malay Language pedagogical knowledge and the self-efficacy of preschool teachers. This study employs a quantitative survey involving 30 preschool teachers in Negeri Sembilan, using a simple random sampling technique. Data were collected through questionnaires and analyzed statistically. The findings indicate a positive relationship between preschool teachers and students' performance. The results of this study contribute to the design of teacher training programs to enhance teachers' skills and confidence in teaching.

**Keywords:** Preschool, Early Childhood Education, Special Education

## Introduction

Preschool education, as defined in the Education Act 1996, refers to educational programs for children aged 4 to 6 years old (Ministry of Education Malaysia, 2013). The goal of preschool education is to develop children's potential holistically in terms of physical, emotional, spiritual, intellectual, and social aspects through a safe and nurturing learning environment enriched with enjoyable, creative, and meaningful activities. This foundation aims to enhance children's skills and self-confidence, enabling them to face challenges and responsibilities in primary school.

Self-efficacy is defined as an individual's belief and confidence in their ability to perform tasks or responsibilities effectively. Teachers' self-efficacy significantly impacts their ability to improve their Pedagogical Content Knowledge (PCK). According to Tschannen-Moran and Woolfolk Hoy (2001), teachers' self-efficacy directly influences their capability to utilize effective teaching strategies, including a better application of PCK. The relationship

between teachers' self-efficacy and PCK is a crucial aspect in the context of teaching and learning.

Students need to be actively involved in the learning process, encouraged to articulate their thoughts, and motivated to solve problems. This study is based on the Teacher Efficacy Model proposed by Tschannen-Moran and Hoy (2001), which explores issues related to teacher efficacy and provides a self-efficacy measurement instrument assessing three elements: (1) student engagement, (2) instructional strategies, and (3) classroom management. Preschool teachers must master pedagogical content to ensure assessments are balanced with students' abilities. The knowledge of preschool teachers should be robust and continually improved (Abdul Halim Masnan et al., 2019).

The relationship between teachers' self-efficacy and PCK plays a significant role in shaping quality and effective teachers in education. Experts emphasize the importance of this relationship in developing effective teaching practices. Both "Preschool Teachers' Self-Efficacy" and "Pedagogical Content Knowledge" are dependent variables influenced by other factors such as teaching strategies, student engagement, classroom management, and demographic factors (e.g., teachers' experience, gender, age). To achieve the study's objectives, the researchers relied on Bandura's Social Cognitive Theory. Albert Bandura's (1997) theory can be seamlessly applied to teaching and learning processes.

Previous studies have largely focused on personal factors of teachers, such as beliefs and motivation, with less attention given to how school context and leadership practices influence teachers' commitment and reflective thinking (Weng & Sun, 2022; Yin et al., 2021). A more comprehensive study using multiple data sources is needed to understand the relationship between teacher commitment, their reflective thinking, and the contextual factors influencing them (Avalos, 2021; Lam & Yan, 2019).

Preschool teachers' pedagogical content knowledge is critical as it enables them to plan, implement, and evaluate learning activities appropriate for preschoolers' developmental stages. The findings of this study can be used to design training programs for preschool teachers to enhance their self-efficacy and pedagogical content knowledge in a balanced manner. Understanding this relationship is also crucial for drafting policies and initiatives in preschool education that can improve the quality of teaching and learning at the foundational level.

This study will help identify gaps in the knowledge and skills of preschool teachers, highlighting areas that need strengthening in teacher training and professional development programs. Moreover, it contributes to efforts in recruiting and retaining quality preschool teachers. By understanding the relationship between self-efficacy and pedagogical content knowledge, strategic measures can be implemented to attract and retain competent preschool educators.

### **Literature Review**

The level of professionalism among educators must be sustainable and meet the Malaysian Education Quality Standards (SKPM). This is essential as the evolving challenges of the modern era require continuous improvement in teacher training. Enhancing teachers'

professionalism necessitates the development of self-efficacy, a critical component for educators (Idawati binti Moin, et al.). Teachers who attribute student success to their own self-efficacy are more likely to explore alternative strategies, collaborate with colleagues, and assist students in viewing themselves as capable learners (Mirto, 2017).

Additionally, teachers' self-efficacy is linked to their job satisfaction within an organization. Self-efficacy influences how teachers think, understand, and practice their roles, which in turn positively impacts students' learning achievements. When teachers collectively share a belief in their ability to make a positive difference for their students, it is often referred to as collective teacher efficacy (Zimmerman, 2018). Furthermore, teachers' self-efficacy involves their ability to manage tasks, responsibilities, and challenges effectively, directly impacting students' academic outcomes and overall development in preschool.

Self-efficacy has gained prominence in school psychology research due to its implications for teaching effectiveness and pedagogical practices. Mustaqim (2008) described self-efficacy as confidence in one's ability to mobilize motivation, cognitive resources, and actions to meet situational demands. A person's self-efficacy determines their activity choices, persistence, and resilience in facing challenges, partly by reducing anxiety that may hinder performance. Individuals with high self-efficacy tend to act with greater confidence in new situations, set higher goals, and persevere because they believe success is attainable. Conversely, individuals with low self-efficacy may experience stress and depression.

Self-efficacy is essentially teachers' confidence in their abilities and belief that they can successfully transfer knowledge to their students (Hurrem Shahzad, 2017). Several studies provide empirical evidence supporting teachers' self-efficacy in making student-related decisions within educational contexts (Tschannen-Moran & Hoy, 2001). Teachers' self-efficacy has also been found to influence children's academic performance and persistence (Martin & Marsh, 2006; Skaalvik & Skaalvik, 2007).

Ashton and Webb (1986) further emphasized that teachers with high self-efficacy are better organized, possess superior teaching and inquiry skills, and can explain concepts effectively and solve academic problems with ease. In contrast, teachers with low self-efficacy often appear confused, feel threatened when questioned, struggle to stay on task, and face challenges in managing student-related issues. Consequently, student performance is strongly correlated with teachers' self-efficacy.

In preschool contexts, teachers' self-efficacy plays a vital role in boosting students' motivation. Research indicates that higher teacher self-efficacy leads to higher student motivation levels. Teachers' self-efficacy positively impacts student behavior, learning, and achievement.

Pedagogical Content Knowledge (PCK) in preschool education highlights the importance of integrating content knowledge with pedagogy to teach young children effectively. Preschool teachers need to understand child development and adopt appropriate teaching strategies to ensure effective learning. Utilizing the PCK model, teachers can design and implement learning activities tailored to preschoolers' developmental needs and individual requirements.

A study by Jalapang and Arumugam Raman (2020) found that teachers' self-efficacy and school climate significantly influenced student academic achievement in seven secondary schools (NSS) in Sri Aman, Sarawak. This demonstrates that self-efficacy has a strong impact on student academic performance and serves as a predictor of achievement.

In the context of the relationship between Pedagogical Content Knowledge (PCK) in Malay Language and preschool teachers' self-efficacy, several connections can be observed:

1. **Mastery of Language and Confidence in Teaching:** Preschool teachers with strong PCK in the Malay language tend to exhibit higher confidence in teaching due to their ability to deliver lessons clearly and effectively.
2. **Creativity in Teaching Malay Language:** Teachers with strong PCK in the Malay language are more creative in designing engaging and relevant lessons for preschool students.
3. **Understanding of Language Learning Stages:** PCK in the Malay language helps preschool teachers understand children's language development stages, enhancing their self-efficacy in teaching.
4. **Effective Teaching Strategies:** Teachers with robust PCK in the Malay language can employ effective teaching strategies to improve preschoolers' language skills, boosting their confidence.
5. **Reduced Anxiety in Teaching Malay Language:** Strong PCK in the Malay language helps teachers overcome anxiety in teaching and learning the language, thereby increasing their self-efficacy.
6. **Monitoring Learning Processes:** With solid PCK in the Malay language, preschool teachers can better monitor and evaluate the language learning process, thereby enhancing their self-efficacy.
7. **Improved Communication Understanding:** Teachers with strong PCK in the Malay language better understand communication aspects, strengthening their confidence in interacting with students, parents, and colleagues.
8. **Awareness of Preschoolers' Language Learning Needs:** PCK in the Malay language fosters greater awareness among teachers of the language learning needs of preschoolers, boosting their confidence to provide appropriate support.
9. **Preparedness for Language Teaching Challenges:** Teachers with strong PCK in the Malay language are more prepared and confident in facing challenges associated with language teaching.
10. **Confidence in Guiding Malay Language Learning:** Robust PCK in the Malay language equips preschool teachers with confidence to guide and assist students in understanding and using the language effectively.

Researchers' insights provide deeper interpretations of the relationship between PCK in the Malay language and preschool teachers' self-efficacy. Understanding these aspects allows for tailored support and training programs to strengthen teachers' PCK, ultimately enhancing their self-efficacy in teaching Malay language to preschoolers.

## Methodology of the Study

### *Research Methodology*

A survey method is appropriate for measuring respondents' views on an issue or topic, achieving program objectives, as well as understanding attitudes and behaviors. Quantitative research enables the study to gather comprehensive data as it involves collecting and analyzing numerical data to describe characteristics, find correlations, or test hypotheses. The survey research design, using questionnaires, aims to systematically describe the facts and

features of a population or area of interest accurately. This approach is cost- and time-effective (Greener & Martelli, 2018).

The study will be conducted in preschools across Negeri Sembilan, covering districts such as Seremban, Kuala Pilah, Port Dickson, Tampin, Jempol, Rembau, and Jelebu. The research population comprises all preschool teachers in Negeri Sembilan. However, a sample of only 30 preschool teachers will be selected using simple random sampling (Krejcie & Morgan, 1970). Simple random sampling is appropriate because it ensures equal chances for all preschool teachers in Negeri Sembilan to be chosen as participants, making it suitable for the study.

### *Research Instruments*

The study will collect data through a structured questionnaire comprising three sections: Section A, Section B, and Section C. **Section A:** Contains demographic information about the sample, such as gender, age, and teaching experience. **Section B:** Focuses on teacher self-efficacy, with 12 items developed based on Tschannen-Moran and Hoy's (2001) Teacher Sense of Efficacy Scale. The items are grouped into three subscales: Efficacy in Student Engagement, Efficacy in Instructional Strategies, Efficacy in Classroom Management

Responses will be measured using a 5-point Likert scale: 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 = "Agree" and 5 = "Strongly Agree". Section C: Tests pedagogical content knowledge (PCK) capabilities in teaching Bahasa Melayu to preschool students. This section will include items adapted from Shulman's (1987) model, focusing on Content Knowledge (CK) and Pedagogical Knowledge (PK). Data for Section C will be analyzed descriptively to provide an overview of the PCK capabilities of the preschool teachers.

### *Data Collection and Analysis Procedures*

Before the study begins, the researcher will obtain approval from the Educational Planning and Research Division (BPPDP) of the Ministry of Education Malaysia. Upon receiving approval, the researcher will liaise with the Negeri Sembilan State Education Department and the relevant District Education Offices.

Initially, questionnaires will be distributed to preschool teachers, who will have 15 minutes to complete them. The researcher will then collect the completed questionnaires. Following this, data collection will proceed to gather sufficient information for meaningful analysis. Creswell (2014) recommends allocating adequate time for data collection to ensure data reliability and representation.

For data reliability, factor analysis and Cronbach's Alpha coefficient will be used. Hair et al. (2014) emphasized the importance of thorough data analysis to draw accurate and evidence-based conclusions.

### *Validity and Reliability of Instruments*

To ensure the validity and reliability of the research instruments, the following steps were taken:

### *Content Analysis*

A specialist in early childhood education reviewed the questionnaire. According to Cohen, Manion, and Morrison (2018), expert review is a crucial process to ensure the instrument's content validity. The specialist provided feedback and recommendations to refine and adjust the study's design. It is anticipated that the questionnaire will accurately measure the concepts under investigation, with expert opinions taken into account.

### *Construct Validity*

Factor analysis was used to ensure that the constructs developed were measured by the items in the questionnaire. According to Hair et al. (2014), factor analysis is a statistical method used to confirm the factor structure within a measurement instrument. This analysis helps validate that each component in the study has sufficient factor loading within its relevant structure. The results of the factor analysis indicate that the questionnaire components align with the theoretical structure they were designed to measure.

### *Reliability*

The Cronbach's Alpha coefficient was used to determine the reliability of each section of the constructed questionnaire. According to George and Mallery (2003), a Cronbach's Alpha value above 0.70 indicates an acceptable level of reliability, while a value of 0.80 is considered very good. This study revealed that the instrument used had high internal consistency, with a Cronbach's Alpha coefficient of 0.85. This indicates that the questionnaire has a high level of reliability and can be used to collect accurate and consistent data. By taking these steps, this study ensures that the instrument used is both valid and reliable. Such measures are critical to ensuring that the collected data is accurate and supports the study's conclusions. High validity and reliability are essential for high-quality research, particularly in advancing knowledge in the field of Early Childhood Education.

### *Research Ethics*

At the beginning of data collection, the researcher obtained permission from the Division of Educational Policy Planning and Research, Ministry of Education (MOE), and the Negeri Sembilan State Education Department. Additionally, each questionnaire included an introductory letter requesting the respondents' cooperation in providing the information required for the study. Respondents were assured of the confidentiality of the information they provided, and that the findings of the study would be used for academic purposes only. They were further assured of their personal protection and informed of their right to accept or decline participation in the study.

### **Findings**

The study's findings were obtained through data analysis using SPSS software. The analysis aimed to address the study's objectives, which involved examining preschool teachers' self-efficacy and pedagogical content knowledge, as well as the relationship between these two variables. Each objective was analyzed and described based on the collected data.



Table 1.1

*Respondents' Profile*

Demografi	Kategori Responden	Kekerapan	Peratusan (%)
Jantina	Lelaki	10	33.3%
	perempuan	20	66.7%
Umur	Bawah 25	3	10.0%
	26-30 tahun	5	16.7%
	31-35 tahun	9	30.0%
	36-40 tahun	7	23.3%
	40 tahun keatas	6	20.0%
Tahap Pendidikan	Diploma perguruan	2	6.7%
	Ijazah Sarjana Muda	19	63.3%
	Sarjana Muda	9	30.0%
Kategori Sekolah	Bandar	16	53.3%
	Luar Bandar	14	46.7%
Daerah	Jempol	5	16.7%
	Kuala Pilah	4	13.3%
	Seremban	13	43.3%
	Rembau	2	6.7%
	Tampin	1	3.3%
	Port Dickson	2	6.7%
	Jelebu	3	10.0%
Pengalaman	Kurang dari 5 tahun	10	33.3%
	6-10 tahun	4	13.3%
	Lebih dari 10 tahun	16	53.3%

*Data Analysis Findings*

From the data analysis, 66.7% (n=20) of the respondents were female, indicating that the majority of participants in this study were women. Meanwhile, male teachers made up only 33.3% (n=10) of the respondents. The respondents represented a wide age range, from below 25 years to over 40 years old. Most respondents (70%) were within the age range of 26 to 40 years. However, representation among respondents below 25 years and above 40 years was relatively small.

In terms of qualifications, 2 respondents (6.7%) held a diploma as their highest qualification, while 9 respondents (30.0%) had a master's degree. The majority of respondents, 19 (63.3%), held a bachelor's degree, indicating that most teachers possessed at least a bachelor's qualification.

The findings also revealed a near-equal distribution of respondents working in urban and rural areas, with 16 respondents (53.3%) working in urban areas and 14 respondents (46.7%) in rural areas. Regarding the districts where the respondents were based, the majority came from Rembau and Seremban, each contributing 23.3% of the total sample. Kuala Pilah accounted for 13.3%, while Jelebu, Jempol, Port Dickson, and Tampin each contributed 10.0%.

The findings showed that 56.7% of respondents had worked for 10 years or more. This indicates that a significant portion of the workforce was experienced and likely held important roles within their organizations. Approximately 13.3% of respondents had been working for 6 to 10 years, making them a moderately experienced group with a good understanding of their roles. Meanwhile, 30% of respondents had been working for less than 5 years.

To address the first research question, which examined the level of self-efficacy among preschool teachers, self-efficacy was divided into three components: Student Engagement, Instructional Strategies, and Classroom Management. Data analysis was conducted using descriptive statistics, including frequency, percentage, mean, and standard deviation.

The descriptive statistics in **Table 1.2** highlighted teachers' self-efficacy based on the constructs. Overall, the findings demonstrated that teachers exhibited high self-efficacy across all aspects of teaching. The highest-rated aspect was the ability to manage student discipline, with a mean score of 3.75 (SD = 0.680), followed by the ability to plan engaging and effective lessons with a mean score of 3.70 (SD = 0.690). Actively engaging students in teaching scored a mean of 3.60 (SD = 0.750).

Table 1.2  
Descriptive Analysis

Konstruk	Aspek Tertinggi	Min (SP)	Interprestasi Skor Min	Aspek terendah	Min (SP)	Interprestasi Skor Min
Penglibatan Murid	Penglibatan murid secara aktif dalam pengajaran	3.60 (0.750)	Tinggi	Memberi peluang murid bertanya soalan dan berkongsi idea	3.43 (0.788)	Tinggi
Strategi Pengajaran	Merancang pengajaran yang menarik dan efektif	3.70 (0.690)	Tinggi	Penggunaan teknologi secara konsisiten dalam pengajaran	3.48 (0.820)	Tinggi
Pengurusan Kelas	Keupayaan guru mengawal disiplin murid secara efektif	3.75 (0.680)	Tinggi	Memberi penghargaan kepada murid yang menunjukkan tingkah laku baik atau pencapaian cemerlang	3.49 (0.795)	Tinggi

The lowest-rated aspect was the consistent use of technology, with a mean score of 3.48 (SD = 0.820), followed by providing opportunities for students to ask questions and share ideas, with a mean score of 3.43 (SD = 0.788). Additionally, giving recognition to students for good behavior or outstanding achievements scored a mean of 3.49 (SD = 0.795). Despite these



differences in mean scores across aspects, overall, the findings indicated that teachers had high self-efficacy in carrying out their teaching responsibilities.

To address the second research question, which examined the level of **Pedagogical Content Knowledge (PCK)** of Malay Language among preschool teachers, PCK was divided into two components: **Content Knowledge (CK)** and **Pedagogical Knowledge (PK)**. Data analysis was conducted using descriptive statistics, including frequency, percentage, mean, and standard deviation.

Table 1.3

*Evaluation of Teachers' Ability to Implement Effective Teaching Strategies*

...	Min	SP	Interpretasi Skor min
<b>1. Pengetahuan Kandungan (CK)</b>			
<b>PCK 1</b> (Saya memahami konsep asas dalam Bahasa Melayu yang perlu dikuasai oleh murid Prasekolah)	<b>3.63</b>	<b>0.75</b>	<b>Tinggi</b>
<b>PCK 5</b> (Saya dapat menilai dan memberikan maklum balas yang tepat terhadap tugas Bahasa Melayu yang dilakukan oleh murid Prasekolah)	<b>3.43</b>	<b>0.88</b>	<b>Rendah</b>
<b>2. Keupayaan Pengetahuan Pedagogi (PK)</b>			
<b>PCK 8</b> (Saya dapat merancang pengajaran yang mengoptimalkan setiap potensi murid)	<b>3.70</b>	<b>0.69</b>	<b>Tinggi</b>
<b>PCK 6</b> (Saya mampu merancang aktiviti pengajaran Bahasa Melayu yang menarik dan sesuai untuk murid prasekolah)	<b>3.57</b>	<b>0.84</b>	<b>Rendah</b>

**Keseluruhan**

PCK items 1 to 5 show average scores (Mean) ranging from 3.43 to 3.63, with Standard Deviations (SD) between 0.75 and 0.88, indicating moderate variation in respondents' answers. All items fall within the "High" category, suggesting that most teachers feel confident in their mastery of Malay Language content for teaching purposes. **PCK 1 (Basic Concepts of the Malay Language)** recorded the highest score. **PCK 5** shows a slight decline in

score (Mean 3.43), suggesting a relatively lower confidence level in this area compared to others.

PCK items 6 to 8 show average scores (Mean) ranging from 3.57 to 3.70, with SD between 0.69 and 0.84. These items also fall within the "High" category, reflecting teachers' confidence in pedagogy. **PCK 7 (Reading and Writing Strategies)** achieved the highest score (Mean 3.69), indicating teachers' proficiency in using these strategies. **PCK 6 (Engaging Activities for Preschoolers)** shows slight variation in responses (SD 0.84), implying that some teachers might require additional guidance in this area.

Table 1.4

*Relationship Between Teachers' Self-Efficacy and Pedagogical Content Knowledge*

		Pengetahuan Kandungan Pedagogi
<i>Efikasi Kendiri Guru</i>	Korelasi Pearson	935**
	Sig. (2-tailed)	<0.001
	N	30

\*\*Korelasi signifikan pada aras 0.01(2-hujung)

The third research question was addressed using Pearson Correlation analysis. The results, as shown in **Table 4.8**, indicate the following:

- The correlation coefficient between teachers' self-efficacy and pedagogical content knowledge is  $r = 0.935$ , demonstrating a very strong positive relationship between the two variables.
- The probability value (Sig. 2-tailed) is  $< 0.001$ , which is significantly lower than the threshold for significance ( $p < 0.01$ ).

Thus, the relationship between teachers' self-efficacy and pedagogical content knowledge is significant at the 0.01 level.

## Discussion

This discussion aims to critically interpret the study findings based on theories, previous studies, and practical implications. The findings, which demonstrate the level of teachers' self-efficacy and pedagogical content knowledge (PCK) as well as the positive relationship between the two, are discussed in the context of teaching and learning effectiveness.

The high level of teacher self-efficacy observed in this study aligns with Bandura's theory, which states that teacher self-efficacy is an individual's belief in their ability to achieve certain goals. Teachers with high self-efficacy are more likely to employ diverse teaching strategies, overcome challenges such as unmotivated or low-performing students, and provide emotional support to their students.

Previous research by Tschannen-Moran and Hoy (2001) supports these findings, highlighting that teachers confident in their abilities tend to be more dedicated and less likely to give up easily. In the context of teaching Malay Language, this confidence is essential to ensure effective teaching, particularly in schools with students of varying achievement levels.

Pedagogical Content Knowledge (PCK) is a critical element in ensuring that teachers deliver content in an easily understandable and engaging manner. This study shows that teachers possess a high level of knowledge, including understanding the fundamentals of the Malay Language, employing suitable teaching techniques for students of varying abilities, and providing constructive feedback. These findings are consistent with Shulman's (1987) assertion that pedagogical knowledge involves the ability to connect content with appropriate teaching methods. In this study, teachers with strong pedagogical knowledge were able to link theory with practice, thereby enhancing teaching effectiveness.

However, despite their high pedagogical knowledge, challenges such as time constraints, lack of educational resources, and heavy workloads might affect the effective application of this knowledge in daily teaching practices. The strong relationship between teachers' self-efficacy and pedagogical knowledge observed in this study reflects the interdependence of these two elements. Teachers confident in their abilities are more likely to enhance their knowledge and skills, take the initiative to use innovative teaching methods, and actively participate in ongoing professional development. Woolfolk Hoy and Davis (2006) state that teachers with high self-efficacy are more inclined to engage in training that improves their knowledge and skills. In this study, teachers who believed in their capabilities were more willing to improve their mastery of pedagogy, especially in teaching the Malay Language.

These findings have several important implications. School administrators should provide support and opportunities for teachers to enhance their self-efficacy and pedagogical knowledge. This can be achieved through professional training focused on Malay Language teaching strategies. Educational policies should address the needs of teachers, particularly in terms of emotional support and educational resources, to ensure effective teaching. Teacher training programs should emphasize the importance of self-efficacy and PCK in improving teaching effectiveness. Training modules should be designed to help teachers build confidence and master relevant teaching techniques.

Based on these findings, future research could consider several recommendations. First, the study could be expanded to include various regions or countries to gain a more comprehensive perspective. Second, qualitative approaches, such as in-depth interviews, could be used to understand the challenges teachers face in improving their self-efficacy. Additionally, future studies could focus on interventions aimed at enhancing PCK mastery, such as more interactive and collaborative professional development programs.

Overall, the findings of this study emphasize the importance of teachers' self-efficacy and pedagogical content knowledge in ensuring teaching effectiveness. The strong relationship between these two elements provides evidence that efforts to boost teachers' confidence must be accompanied by the strengthening of their pedagogical knowledge.

## **Conclusion**

This study contributes to existing literature by providing empirical data on the relationship between self-efficacy and PCK in the context of preschool education in Malaysia. The findings offer valuable guidance for researchers and educators in their efforts to improve the quality of early childhood education. Overall, this study confirms that preschool teachers' self-

efficacy is a critical factor influencing the use of PCK and, consequently, student achievement. Therefore, efforts to enhance self-efficacy through effective training programs are essential for improving teaching quality and learning outcomes at the preschool level

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