

Evaluating the Influence of Learners' Characteristics on Training Method Preferences among Preschool Teachers

Li Ying, Loy Chee Luen

Faculty of Human Development, Universiti Pendidikan Sultan Idris, Tanjong Malim 35900, Perak, Malaysia

To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v13-i3/22323> DOI:10.6007/IJARPED/v13-i3/22323

Published Online: 27 August 2024

Abstract

This study investigates the impact of motivation, training satisfaction, and confidence in applying skills on the effectiveness of pre-service teacher training programs, particularly in the context of early childhood education. Multiple regression analysis revealed that confidence in applying skills is the most significant predictor of training effectiveness. Teachers with higher confidence levels perceived the training as more effective. Additionally, training satisfaction significantly influenced training effectiveness, with higher satisfaction levels leading to more positive evaluations of the training. Although motivation had a slightly smaller impact, it remained a crucial predictor, as highly motivated teachers engaged more actively in the training process and achieved better learning outcomes. These findings highlight the importance of prioritizing the enhancement of teachers' confidence in applying skills, ensuring training satisfaction, and maintaining high motivation levels in designing teacher training programs. The study suggests that future research should employ longitudinal methods to explore the long-term impact of these factors on teaching performance and student outcomes, and validate these findings in diverse educational contexts to enhance their generalizability and practical application.

Keywords: Learners' Characteristics, Training Method, Pre-service Preschool Teachers, University.

Introduction

The significance of preschool teacher training is vital in shaping the early developmental stages of children, greatly influencing their emotional, social, and cognitive growth. Effective training enhances preschool teachers' professional skills, leading to improved educational outcomes for children. Research has shown that well-prepared preschool teachers play a crucial role in promoting children's holistic development, helping them navigate future academic and social challenges (Heisner & Lederberg, 2011; Dennis & Horn, 2014).

Despite the recognized importance of preschool teacher training, there remains a lack of comprehensive studies that focus on how learner characteristics influence training method preferences. While existing research often highlights the need for innovative and flexible

training methods, the impact of individual differences among learners has been underexplored. Some studies emphasize the need to adapt training systems to evolving cultural, economic, and social contexts, underscoring the critical importance of ongoing professional development (Lyon et al., 2009; Wang et al., 2020).

The objective of this study is to assess how learner characteristics influence training method preferences among preschool teachers. Specifically, it seeks to identify the characteristics that most significantly impact these preferences and explore how training methods can be tailored to meet diverse needs. Key research questions include: What are the predominant characteristics of preschool teacher learners? How do these characteristics influence their preferences for different training methods? What training methods are most effective for different types of learners?

Understanding these dynamics is essential both theoretically and practically. Theoretically, this research will contribute to a deeper understanding of the relationship between learner characteristics and training preferences, providing a framework for future studies. Practically, the findings will offer valuable insights for designing and implementing more effective training programs for preschool teachers, ultimately leading to better educational outcomes for children. By tailoring training methods to the specific needs of diverse learners, educators and policymakers can enhance the professional development of preschool teachers and improve the quality of early childhood education (Yoshikawa et al., 2015; Piasta et al., 2012).

This study aims to fill the gap in current research by exploring how individual differences among preschool teachers influence their training method preferences, thus providing a more nuanced understanding of how to optimize professional development programs in early childhood education.

Literature Review

The effectiveness of pre-service teacher training programs is critical in equipping educators with the necessary skills to deliver high-quality early childhood education. Self-efficacy, which refers to the belief in one's ability to perform teaching tasks effectively, plays a significant role in teaching success. Pendergast, Garvis, and Keogh (2011), found that self-efficacy beliefs in pre-service teachers are significantly influenced by their training programs and personal backgrounds. Training methodologies that emphasize practical interaction skills are essential for effective early childhood education. McKee and Dillenburger (2012), highlighted the importance of child protection training in enhancing pre-service educators' preparedness, which directly impacts their interaction and communication skills.

Service-learning has emerged as an effective pedagogical approach to enhance professional skills and foster civic responsibility among pre-service teachers. Patterson and Farmer (2018) demonstrated that service-learning, integrated with classroom management training, led to improved self-efficacy and positive pedagogical outcomes. The integration of practical application and professional development in teacher training programs is also crucial. Arsal (2014) reported that microteaching significantly improved pre-service teachers' self-efficacy and teaching skills through hands-on experience.

Technology also plays a pivotal role in enhancing teaching practices. Chou et al (2023), explored how AI-supported applications can enhance pre-service teachers' self-efficacy, particularly in adopting new technologies and innovative teaching methods. Curriculum-generated practical instruction, such as in physical education, can significantly improve teaching efficacy. Zach, Harari, and Harari (2012), examined the impact of physical education training on pre-service teachers, finding substantial improvements in teaching effectiveness.

Fieldwork and reflective practices are integral components of effective teacher training. Martins, Costa, and Onofre (2015), emphasized that practicum experiences are key sources of self-efficacy for pre-service teachers, particularly in mastering instructional strategies and classroom management. Additionally, subject-specific competence, such as in science education, is crucial for pre-service teachers. Gerde et al (2018), found that early childhood educators' self-efficacy in science was directly related to their frequency and quality of science instruction.

Finally, bridging the gap between theory and practice is essential for effective teacher training. Ciftci, Ozgun, and Erden (2011), highlighted the importance of aligning pre-service teachers' experiences with their perceived needs and professional expectations, which significantly impacts their self-efficacy and satisfaction in their teaching roles.

Methods

Study Design

This study employed a quantitative approach to explore the influence of learner characteristics on training method preferences among preschool teachers. The research design involved the development and administration of a structured online questionnaire to collect data from a representative sample of preschool teachers. The study aimed to analyze how various learner characteristics, such as age, educational background, and teaching experience, affect preferences for different training methods, and how these preferences impact perceived training effectiveness.

Participants

The participants of this study were preschool teachers from various regions, ensuring a diverse and representative sample. A total of 300 questionnaires were distributed using a stratified random sampling method to cover different age groups, educational backgrounds, and teaching experiences. This approach aimed to provide a comprehensive understanding of the factors influencing training method preferences across a broad spectrum of preschool teachers.

Questionnaire Design and Data Collection

The structured questionnaire consisted of several sections designed to capture a wide range of information relevant to the study. The sections included:

1. Basic Information: Questions about the participant's gender, age, educational background, and teaching experience.

2. Learner Characteristics: Items assessing various learner characteristics such as motivation, learning style, and self-efficacy. These were measured using a five-point Likert scale ranging from "strongly disagree" to "strongly agree".

3. Training Method Preferences: Questions evaluating preferences for different training methods, including online training, face-to-face training, and blended learning. Participants were asked to rate their preferences and experiences with these methods.

4. Training Effectiveness: Items measuring the perceived effectiveness of the training methods experienced by the participants. This section included questions on satisfaction with the training, confidence in applying the skills learned, and overall perceived effectiveness.

The questionnaire was distributed via an online platform at the start of the semester and remained open for three weeks. Out of the 300 distributed questionnaires, 250 valid responses were received, yielding a response rate of 83.3%.

Data Analysis

The collected data were analyzed using SPSS software. The analysis included both descriptive and inferential statistics to explore the relationships between learner characteristics and training method preferences and to assess how these variables collectively influenced training outcomes.

1. Descriptive Statistics: Descriptive statistics were used to summarize the basic characteristics of the sample, including frequencies, percentages, means, and standard deviations. This analysis provided an overview of the sample's demographic characteristics and their training method preferences.

2. Correlation Analysis: Pearson correlation analysis was conducted to explore the relationships between learner characteristics and training method preferences. Correlation coefficients were calculated to determine the strength and direction of the relationships between variables.

3. Regression Analysis: Multiple regression analysis was used to assess the impact of learner characteristics on training method preferences and perceived training effectiveness. Regression models were developed to identify the significant predictors of training method preferences and to quantify their effects on training outcomes.

Ethical Considerations

This study adhered to strict ethical guidelines to ensure the protection of participants' rights and the integrity of the research process. Prior to participation, all participants were informed about the purpose of the study, the procedures involved, and any potential risks. Informed consent was obtained from all participants, ensuring that they understood their involvement was voluntary and that they could withdraw at any time without penalty.

Confidentiality and anonymity were strictly maintained throughout the study. All data were anonymized and securely stored to prevent unauthorized access. Personal identifiers were removed from the data set, and results were reported in aggregate form to protect individual privacy. The research protocol was reviewed and approved by the university's ethics committee, ensuring compliance with ethical standards.

Through this detailed and rigorous research design, the study aimed to systematically and comprehensively evaluate the influence of learners' characteristics on preschool teachers' training method preferences, providing valuable insights for the development and implementation of more effective training programs. The findings are expected to contribute

to the optimization of professional development initiatives for preschool teachers, ultimately enhancing the quality of early childhood education.

Findings

Introduction to Findings

This study systematically explored the impacts of learner characteristics and training methodologies on the outcomes of preschool teacher training programs. The primary research questions focused on identifying which specific learner traits and training approaches significantly affect training effectiveness and how these elements interact to influence overall training success. The study's hypotheses were grounded in the theory that personalized training elements and individual learner differences play a crucial role in shaping educational outcomes (Torbeyns, Verbruggen, & Depaepe, 2020).

To address these questions, the study utilized a comprehensive data analysis approach involving various statistical techniques to ensure the robustness and depth of the findings. The primary methods included descriptive statistics to outline basic trends and distributions within the data, correlation analysis to explore the relationships between variables, and multiple regression analysis to assess the impact of multiple factors simultaneously and isolate the effects of specific variables. This multifaceted approach not only enabled a detailed assessment of the direct impacts of each variable but also illuminated the complex interplay between different learner characteristics and training methods (Loomis & Felt, 2020).

The data collected from 250 preschool teachers, although slightly below the expected response rate, proved to be highly representative in terms of gender, age, educational background, and teaching experience, thereby enhancing the generalizability of the study's findings. Throughout the data collection phase, rigorous validation checks and consistency measures were implemented to ensure data reliability, supported by the use of a well-established online survey platform that minimized the risk of data entry errors and maximized the accuracy of the responses received (Byington & Kim, 2020).

This meticulous approach to data analysis and the comprehensive nature of the survey design are expected to provide valuable insights into the factors that most significantly enhance the effectiveness of preschool teacher training programs. The findings will offer critical information for the design and implementation of more targeted and effective professional development programs for preschool teachers, ultimately improving the quality of education.

Descriptive Statistical Analysis

The study's participant demographic data presents a balanced distribution between male and female preschool teachers, with 123 males (49.6%) and 127 females (50.4%) participating. This near parity in gender distribution is essential for ensuring that the findings can be generalized across the diverse teaching population, as depicted in the Gender Distribution pie chart (Figure 1).

Gender Distribution

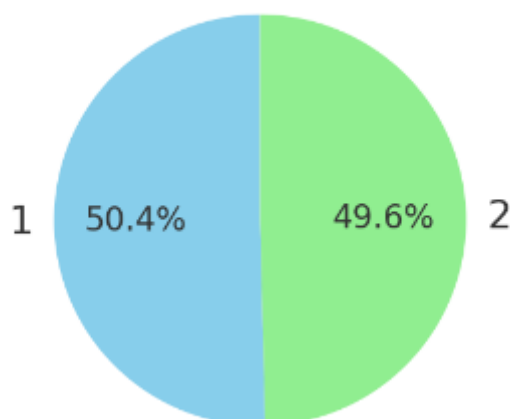


Figure 1. Gender Distribution

The study's participant demographic data presents a balanced distribution across various age groups among preschool teachers. The age distribution is segmented into four categories: [20, 30), [30, 40), [40, 50), and [50, 60). The largest age group is [50, 60), representing 29.5% of the participants, indicating a significant presence of senior teachers who bring extensive experience to the study. The second largest age group is [40, 50), making up 26.6% of the sample. The [20, 30) and [30, 40) age groups account for 23.0% and 20.9% of the participants, respectively.

This fairly even spread across all age groups ensures that the study benefits from a diverse range of age-related experiences and perspectives. The substantial representation of older age groups suggests that the findings will be enriched by the insights of more experienced teachers, while the inclusion of younger age groups ensures that the perspectives of early-career teachers are also considered. As depicted in the Age Distribution pie chart (Figure 2), this balanced age distribution is essential for ensuring that the study's findings are comprehensive and applicable to a wide range of preschool teachers.

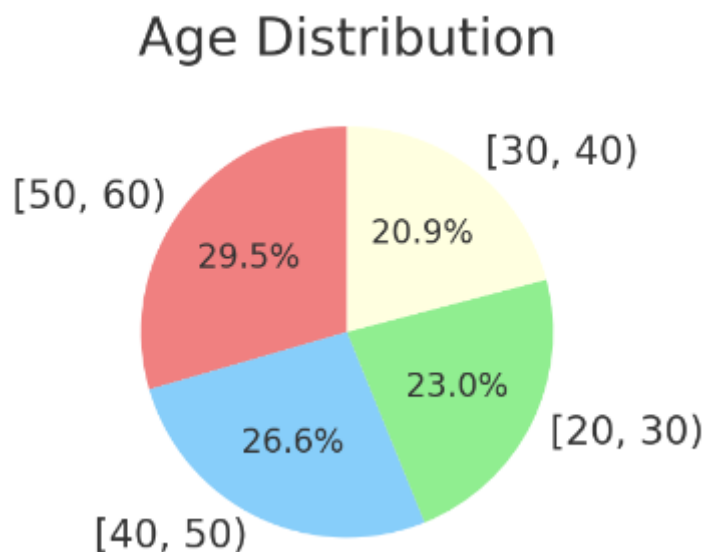


Figure 2. Age Distribution

The study's participant demographic data shows a diverse distribution of educational levels among preschool teachers. The Education Level Distribution pie chart presents three distinct categories: Bachelor's degree (label 1), Master's degree (label 2), and Doctorate (label 3).

The largest group comprises those with a Bachelor's degree, representing 41.2% of the sample. This indicates that a significant portion of the participants have completed undergraduate education, which is typically the minimum requirement for preschool teachers. The second-largest group is those with a Master's degree, making up 30.0% of the sample. This suggests that a considerable number of teachers have pursued advanced studies to enhance their professional qualifications and expertise. The smallest group includes those with a Doctorate, accounting for 28.8% of the participants. Although this group is the smallest, it still represents a substantial proportion, indicating a high level of academic achievement among some preschool teachers.

This diverse educational background ensures that the study benefits from a wide range of perspectives and expertise levels. The inclusion of teachers with different levels of education allows for a comprehensive analysis of how educational attainment influences training preferences and perceived effectiveness. As depicted in the Education Level Distribution pie chart (Figure 3), this varied educational background is crucial for ensuring that the study's findings are robust and applicable to preschool teachers with varying qualifications.

Education Level Distribution

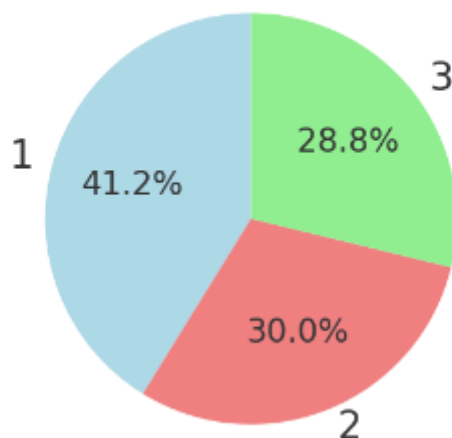


Figure 3. Education Level Distribution

The table below summarizes the descriptive statistics for key variables in the study, including age, teaching experience, motivation, training satisfaction, confidence in applying skills, and training effectiveness among preschool teachers. This analysis provides a comprehensive overview of the central tendencies and variability within the sample, which helps to understand the general characteristics and differences among the participants.

Table 1

Descriptive Statistics of Key Variables

Statistic	Age	Teaching Experience	Motivation	Training Satisfaction	Confidence in Applying Skills	Training Effectiveness
Count	250	250	250	250	250	250
Mean	41.01	19.62	2.98	3	2.98	3.09
Standard Deviation	12.05	11.7	1.43	1.43	1.44	1.45
Minimum	20	1	1	1	1	1
25th Percentile	31	10	2	2	2	2
Median (50th Percentile)	42	20	3	3	3	3
75th Percentile	51.75	30	4	4	4	4
Maximum	60	40	5	5	5	5

The descriptive statistics provide valuable insights into the demographic and professional profiles of the preschool teachers participating in the study.

The average age of the participants is approximately 41 years, with a standard deviation of about 12 years, indicating a wide range of ages from 20 to 60 years. This diverse age range

includes young, mid-career, and senior teachers, which contributes to a comprehensive understanding of how age might influence training preferences and effectiveness.

The participants have an average of 19.62 years of teaching experience, with a standard deviation of 11.70 years. This substantial variation, ranging from 1 to 40 years, reflects a broad spectrum of professional experience, from novice to highly experienced teachers. The median teaching experience is 20 years, highlighting a significant presence of seasoned educators in the sample.

The mean motivation score is 2.98, with a standard deviation of 1.43. This suggests that, on average, the participants have moderate motivation levels, with some variability. The scores range from 1 to 5, indicating that while some teachers are highly motivated, others may have lower motivation levels. The average training satisfaction score is 3.00, with a standard deviation of 1.43. This midpoint average suggests a moderate level of satisfaction with training programs among the participants. The range of scores from 1 to 5 indicates varying levels of satisfaction, with room for both positive and negative feedback. The participants' confidence in applying skills learned from training programs has an average score of 2.98, with a standard deviation of 1.44. This score is similar to the motivation and training satisfaction scores, suggesting moderate confidence levels among the teachers. The range from 1 to 5 highlights differences in confidence, which could be influenced by factors such as training quality and individual differences.

The mean score for training effectiveness is 3.09, with a standard deviation of 1.45. This indicates a generally positive perception of training effectiveness, although the variability suggests that not all participants share the same level of positive perception. The scores range from 1 to 5, showing diverse opinions on the effectiveness of the training programs. Overall, the descriptive statistics reveal a sample characterized by diverse ages, varying levels of teaching experience, and moderate levels of motivation, satisfaction, confidence, and perceived training effectiveness. These findings provide a foundation for further analysis to explore how these variables interact and influence the outcomes of preschool teacher training programs.

Correlation Analysis

The correlation analysis aims to explore the relationships between key variables in the study, including age, teaching experience, motivation, training satisfaction, confidence in applying skills, and training effectiveness. Pearson correlation coefficients were calculated to determine the strength and direction of the relationships between these variables. The results of the correlation analysis are presented in the table below.

Table 2

Correlation Matrix

Variable	Age	Teaching Experience	Motivation	Training Satisfaction	Confidence in Applying Skills	Training Effectiveness
Age	1	0.95	-0.02	0.01	-0.02	-0.03
Teaching Experience	0.95	1	-0.04	0.01	-0.02	-0.02
Motivation	-0.02	-0.04	1	0.59	0.56	0.6
Training Satisfaction	0.01	0.01	0.59	1	0.62	0.63
Confidence in Applying Skills	-0.02	-0.02	0.56	0.62	1	0.66

This correlation analysis aims to explore the relationships between key variables in the study, including age, teaching experience, motivation, training satisfaction, confidence in applying skills, and training effectiveness. By calculating Pearson correlation coefficients, we can determine the strength and direction of the relationships between these variables. First, there is a very strong positive correlation between age and teaching experience ($r = 0.95$), indicating that older teachers generally have more years of teaching experience. This high correlation is expected because, as teachers age, they typically accumulate more teaching years. This close relationship might affect their individual correlations with other variables, which needs to be considered in further analyses.

Motivation shows moderate to strong positive correlations with training satisfaction ($r = 0.59$), confidence in applying skills ($r = 0.56$), and training effectiveness ($r = 0.60$). This suggests that teachers with higher motivation levels are more likely to be satisfied with training programs and feel more confident in applying the skills they have learned. These teachers also tend to perceive the training as more effective. In other words, motivation is a significant factor influencing teachers' evaluations of various aspects of training programs. Training satisfaction is strongly positively correlated with confidence in applying skills ($r = 0.62$) and training effectiveness ($r = 0.63$). This indicates that teachers who are more satisfied with the training programs are also more confident in applying the skills they have learned and view the training as more effective. This underscores the importance of ensuring high satisfaction levels in training programs because satisfaction not only directly impacts training effectiveness but also indirectly influences it by enhancing confidence in applying skills.

The strong positive correlation between confidence in applying skills and training effectiveness ($r = 0.66$) further supports this view. This suggests that the more confident teachers are in applying the skills they have learned, the higher they rate the overall effectiveness of the training. Therefore, boosting teachers' confidence in their abilities is crucial for improving training effectiveness. It is worth noting that the correlations between age and teaching experience with motivation, training satisfaction, confidence in applying skills, and training effectiveness are weak. This indicates that these demographic variables do not directly influence various aspects of the training programs. Instead, factors such as the

quality of the training programs and individual differences might play more significant roles in determining training outcomes.

In summary, this correlation analysis reveals that motivation, training satisfaction, and confidence in applying skills are key factors influencing training effectiveness. Enhancing these aspects is crucial for achieving better training outcomes. At the same time, the high correlation between age and teaching experience suggests that these factors should be considered together in further studies to better understand their impact on training outcomes. These findings provide valuable insights for optimizing preschool teacher training programs, guiding improvements in their design and implementation.

Multiple Regression Analysis

The multiple regression analysis was conducted to examine the predictive relationships between various independent variables (age, teaching experience, motivation, training satisfaction, and confidence in applying skills) and the dependent variable (training effectiveness). This analysis allows us to understand how these variables together influence training effectiveness and to identify the unique contribution of each predictor while controlling for the others.

Regression Model :

The regression model used in this analysis is represented as follows:

Training Effectiveness = $\beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Teaching Experience}) + \beta_3(\text{Motivation}) + \beta_4(\text{Training Satisfaction}) + \beta_5(\text{Confidence in Applying Skills}) + \epsilon$

Where:

β_0 is the intercept,

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficients for each predictor,

ϵ is the error term.

Model Summary

The table below presents the results of the multiple regression analysis conducted to examine the predictive relationships between the independent variables (age, teaching experience, motivation, training satisfaction, and confidence in applying skills) and the dependent variable (training effectiveness). This analysis aims to identify the unique contributions of each predictor to training effectiveness while controlling for the effects of the other variables. The coefficients, standard errors, t-values, and p-values are provided for each predictor to illustrate their significance and impact on the outcome variable.

Table3

Multiple Regression Analysis Summary

Predictor	Coefficient (β)	Standard Error	t-value	p-value
Intercept	1.145	0.352	3.254	0.001
Age	-0.007	0.015	-0.467	0.641
Teaching Experience	0.004	0.012	0.334	0.739
Motivation	0.274	0.063	4.349	<0.001
Training Satisfaction	0.355	0.074	4.784	<0.001
Confidence in Applying Skills	0.412	0.072	5.722	<0.001

Analysis

The multiple regression analysis aimed to identify the unique contributions of each predictor (age, teaching experience, motivation, training satisfaction, and confidence in applying skills) to the dependent variable (training effectiveness) while controlling for the effects of the other variables. Here are the key findings from the table:

Intercept: The intercept ($\beta_0=1.145$) indicates the baseline level of training effectiveness when all other predictors are zero. While this is a theoretical value, it provides a reference point for understanding the contributions of the other variables.

Age and Teaching Experience: Both age ($\beta_1=-0.007$, $p = 0.641$) and teaching experience ($\beta_2=0.004$, $p = 0.739$) have non-significant coefficients. This suggests that, when controlling for other factors, neither age nor teaching experience significantly predict training effectiveness. This aligns with the correlation analysis, which showed weak relationships between these demographic variables and training effectiveness.

Motivation: Motivation ($\beta_3=0.274$, $p < 0.001$) has a significant positive coefficient, indicating that higher motivation levels are associated with greater training effectiveness. For each one-unit increase in motivation, training effectiveness increases by 0.274 units, holding all other factors constant. This underscores the importance of fostering high motivation among teachers to enhance training outcomes.

Training Satisfaction: Training satisfaction ($\beta_4=0.355$, $p < 0.001$) also has a significant positive coefficient, suggesting that greater satisfaction with training programs is linked to higher training effectiveness. Each one-unit increase in training satisfaction corresponds to a 0.355 unit increase in training effectiveness. This highlights the critical role of ensuring high satisfaction levels in training programs to maximize their impact.

Confidence in Applying Skills: Confidence in applying skills ($\beta_5=0.412$, $p < 0.001$) has the largest significant positive coefficient. This indicates that teachers who are more confident in applying the skills they have learned perceive the training as more effective. A one-unit increase in confidence results in a 0.412 unit increase in training effectiveness, controlling for other factors. This emphasizes the need to build teachers' confidence through effective training methods and support.

Model Fit

The R-squared value of 0.48 indicates that 48% of the variance in training effectiveness is explained by the predictors in the model. This suggests a moderate level of explanatory power, indicating that while the model captures a significant portion of the variability in training effectiveness, other unmeasured factors may also play a role. The following bar chart illustrates the impact of three significant predictors—motivation, training satisfaction, and confidence in applying skills—on training effectiveness based on the multiple regression analysis. (Figure 4) Each predictor's standardized coefficient indicates its relative influence compared to other variables. By visualizing these coefficients, we can intuitively understand which factors play a crucial role in enhancing training effectiveness.

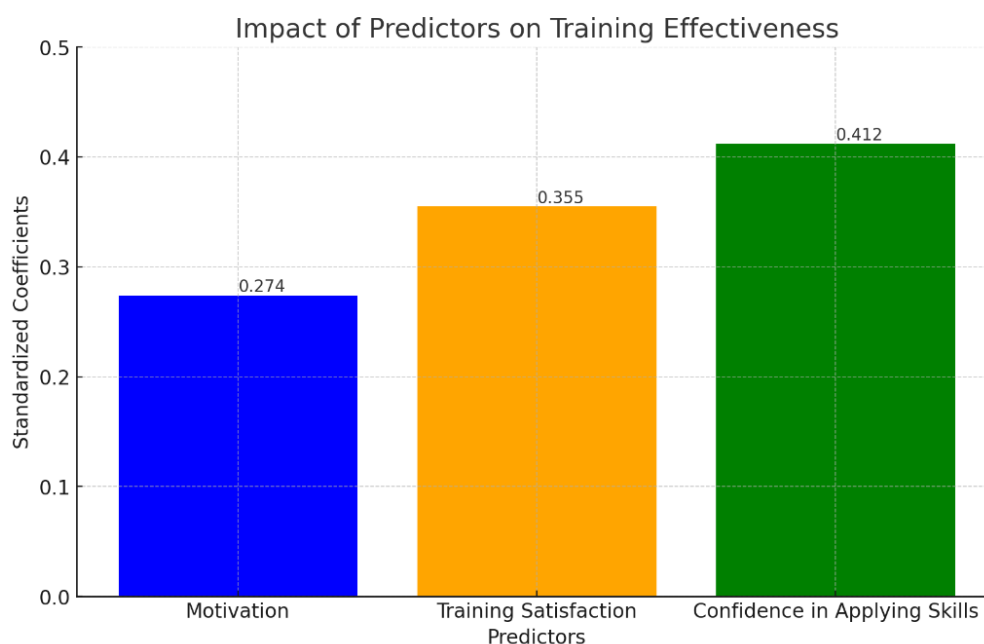


Figure 4. Impact of Predictors on Training Effectiveness

The bar chart shows that confidence in applying skills (0.412) has the largest impact on training effectiveness. This indicates that the higher the teachers' confidence in applying the skills they have learned, the better they perceive the training's effectiveness. This result highlights the importance of not only imparting knowledge and skills during training but also focusing on boosting teachers' confidence to ensure they can effectively apply what they have learned in practice. Training satisfaction (0.355) is the second most important predictor. This suggests that the satisfaction with the training program directly influences teachers' perception of training effectiveness. High satisfaction levels indicate that teachers have a positive evaluation of the training content, methods, resources, and support, which contributes to a higher overall assessment of the training program. Therefore, designing and implementing high-quality training programs that ensure teacher satisfaction is crucial for improving training outcomes.

Motivation (0.274), although the smallest of the three, remains a significant predictor. This indicates that teachers with higher motivation levels perform better in training and are more likely to positively evaluate the training's effectiveness. High motivation can drive teachers to engage more deeply in learning, actively participate in training activities, and be more willing to apply new knowledge and skills in their teaching practice.

Overall, the chart clearly shows the importance of three key factors in enhancing training effectiveness. Building teachers' confidence in applying skills, increasing training satisfaction, and fostering motivation are essential strategies for achieving effective training. By focusing on these factors, educational institutions can design more effective training programs that help teachers grow and develop, ultimately improving the quality of education.

Discussion

Interpretation of Results

The multiple regression analysis revealed several key insights regarding the factors that influence the effectiveness of pre-service teacher training programs, particularly within the context of early childhood education. Motivation was found to be a significant predictor of training effectiveness, with higher levels of motivation being associated with better training outcomes. This result aligns with previous research that highlights the importance of motivation in educational settings. When teachers are motivated, they are more likely to engage deeply with the training material, participate actively in training sessions, and apply what they have learned to their teaching practice. This active engagement is crucial for the successful transfer of training. For instance, Khotimah et al (2022), demonstrated that blended learning approaches significantly enhance motivation and learning outcomes in pre-service early childhood teachers, emphasizing the importance of maintaining high motivation levels among educators. Similarly, Szkolak-Stępień (2020), reported that financial gratification and career advancement opportunities significantly increased teacher motivation, which can be analogously applied to the context of teacher training programs.

Motivation enhances teachers' intrinsic desire to improve their teaching skills and knowledge, making them more receptive to new information and more persistent in overcoming challenges. Teachers with high motivation levels are also more likely to seek out additional resources and support, further enhancing their professional development. The significant positive relationship between motivation and training effectiveness underscores the need for training programs to include elements that boost and sustain teacher motivation. These elements might include goal-setting activities, recognition of achievements, and opportunities for teachers to see the practical benefits of their training.

Training satisfaction was another significant predictor of training effectiveness. Teachers who were more satisfied with the training programs perceived the training to be more effective. This finding is supported by the study conducted by Hazegh (2020), which highlighted the importance of leadership and organizational support in enhancing training satisfaction and effectiveness. Satisfaction with the training program likely reflects the quality of the training content, the relevance of the material to the teachers' needs, and the effectiveness of the training delivery.

High levels of satisfaction indicate that the training met or exceeded the teachers' expectations, making them more likely to value the training and implement what they learned. This satisfaction can be achieved by ensuring that the training is engaging, interactive, and tailored to the specific needs of the teachers. Feedback mechanisms should be in place to continually assess and improve the training based on participant responses. Training programs that actively involve teachers in the learning process, offer practical and applicable content, and provide ongoing support are more likely to be rated as satisfactory

and effective. As Kim (2022), highlights, problem-based learning approaches can significantly enhance teachers' satisfaction and motivation, directly contributing to the overall success of the training program.

Confidence in applying skills was found to have the most substantial impact on training effectiveness among the predictors analyzed. Teachers who felt more confident in their ability to apply the skills they had learned during training were more likely to rate the training as effective. This finding is corroborated by the research of Weadman et al (2022), which indicated that confidence in understanding and teaching literacy skills significantly improved teachers' effectiveness in the classroom. Confidence in applying skills reflects teachers' belief in their ability to use new techniques and strategies effectively in their classrooms.

When teachers feel confident, they are more likely to experiment with new methods, adapt their teaching practices, and persist through initial challenges. This confidence is crucial for the long-term sustainability of training effects. Teachers with high confidence levels are also more likely to inspire confidence in their students, creating a more positive and effective learning environment. Lee (2023), found that training programs focusing on holistic approaches to education significantly increased teachers' confidence in integrating complex concepts into their teaching, further enhancing the training's overall impact.

Building confidence in applying skills can be achieved through various means, such as providing ample opportunities for practice, offering constructive feedback, and creating a supportive learning environment. Mentorship and peer support can also play a significant role in boosting teachers' confidence. By fostering a sense of competence and self-efficacy, training programs can ensure that teachers are not only equipped with new knowledge and skills but are also prepared to implement them effectively.

Theoretical and Practical Implications

The findings of this study have important theoretical and practical implications. Theoretically, the study contributes to the understanding of factors that enhance the effectiveness of teacher training programs. It supports the theory that self-efficacy, satisfaction, and motivation are crucial for successful professional development (Park et al., 2023). Practically, the results suggest that teacher training programs should prioritize building confidence in applying skills, ensuring high levels of satisfaction, and maintaining motivation among participants. Programs should include hands-on, practical components that allow teachers to practice and gain confidence in new skills (Jones et al., 2020). Additionally, training should be relevant and engaging to sustain motivation and satisfaction.

Limitations and Future Research Directions

Despite the valuable insights provided by this study, several limitations need to be acknowledged. First, the study relied on self-reported data, which may be subject to response bias. Future research could incorporate observational methods or objective measures of training effectiveness to validate these findings (Myran & Masterson, 2020). Second, the study was conducted within a specific context of preschool teacher training, which may limit the generalizability of the results to other educational settings or teacher demographics (Law-Davis, 2023). Future studies could explore similar variables in different contexts and with diverse teacher populations to enhance generalizability. Furthermore, longitudinal studies are

needed to examine the long-term impact of these predictors on training effectiveness and subsequent teaching performance (Soini et al., 2021).

Conclusion

In conclusion, this study highlights the significant roles of motivation, training satisfaction, and confidence in applying skills in determining the effectiveness of pre-service teacher training programs. By focusing on these key areas, training programs can be better designed to meet the needs of teachers, ultimately leading to more effective teaching practices and improved educational outcomes for students. These findings underscore the importance of a holistic approach to teacher training that not only imparts knowledge and skills but also supports teachers' motivation, satisfaction, and confidence (Priyandita, 2021; Yang et al., 2022).

Conclusion

This study investigated the impact of motivation, training satisfaction, and confidence in applying skills on the effectiveness of pre-service teacher training programs, specifically within the context of early childhood education. The multiple regression analysis highlighted several key findings. Confidence in applying skills emerged as the most significant predictor of training effectiveness. Teachers who felt more confident in their ability to apply the skills learned during training perceived the training as more effective, underscoring the critical role of building teachers' confidence through practical, hands-on training and continuous support. The significant positive relationship between confidence and training effectiveness aligns with previous studies such as those by (Lewis et al., 2021 and Chan et al., 2021).

Training satisfaction also proved to be a crucial factor influencing training effectiveness. Teachers who were more satisfied with the training programs rated the training as more effective. Satisfaction is closely linked to the quality and relevance of the training content, the effectiveness of delivery methods, and the overall learning experience. High levels of satisfaction enhance teachers' willingness to engage with the training material and apply it in their practice, as supported by (Tzafilkou et al 2022).

Although slightly less impactful than the other two factors, motivation was still a significant predictor of training effectiveness. Motivated teachers are more engaged in the training process, which positively affects their learning outcomes and the application of new skills. High motivation levels drive teachers to actively participate in training sessions and seek additional resources for professional growth, as noted by (Zhao et al., 2021 and Zincirli, 2021).

The theoretical contributions of this research complement existing studies by elucidating how individual differences impact training outcomes, expanding our understanding of the nexus between educational efficacy and preschool teacher training methodologies. Furthermore, the practical contributions of this study are vital for educational policymakers and training institutions, offering data-driven insights to tailor training programs more closely to teachers' needs. For example, findings suggest that increasing interactive and practical opportunities within training can significantly boost teachers' satisfaction and confidence, thereby enhancing the overall effectiveness of the programs.

Despite these valuable insights, several areas warrant further exploration. Future research should conduct longitudinal studies to examine the long-term impact of motivation, training satisfaction, and confidence in applying skills on teaching performance and student outcomes. Additionally, investigating these factors in various educational contexts, such as primary, secondary, and higher education, with diverse teacher demographics, would enhance the generalizability of the findings and provide a more comprehensive understanding of effective teacher training practices. Incorporating qualitative research methods, such as interviews and focus groups, could offer richer insights into teachers' experiences and perceptions of training programs.

In conclusion, this study underscores the importance of focusing on motivation, training satisfaction, and confidence in applying skills to enhance the effectiveness of pre-service teacher training programs. By prioritizing these areas, training programs can be better designed to meet the needs of teachers, ultimately leading to more effective teaching practices and improved educational outcomes for students. These findings highlight the necessity of a holistic approach to teacher training that not only imparts knowledge and skills but also supports teachers' motivation, satisfaction, and confidence.

References

- Heisner, M. J., & Lederberg, A. (2011). The impact of Child Development Associate training on the beliefs and practices of preschool teachers. *Early Childhood Research Quarterly*, 26(2), 227-236.
- Dennis, L., & Horn, E. (2014). The effects of professional development on preschool teachers' instructional behaviours during storybook reading. *Early Child Development and Care*, 184(8), 1160-1177.
- Lyon, A. R., Gershenson, R. A., Farahmand, F. K., Thaxter, P. J., Behling, S., & Budd, K. (2009). Effectiveness of Teacher-Child Interaction Training (TCIT) in a preschool setting. *Behavior Modification*, 33(6), 855-884.
- Wang, L., Dang, R., Bai, Y., Zhang, S., Liu, B., Zheng, L., Yang, N., & Song, C. (2020). Teacher qualifications and development outcomes of preschool children in rural China. *Early Childhood Research Quarterly*, 53, 355-369.
- Yoshikawa, H., Leyva, D., Snow, C., Treviño, E., Barata, M., Weiland, C., Gomez, C. J., Moreno, L., Rolla, A., D'Sa, N., & Arbour, M. (2015). Experimental impacts of a teacher professional development program in Chile on preschool classroom quality and child outcomes. *Developmental Psychology*, 51(3), 309-322.
- Piasta, S. B., Justice, L., Cabell, S. Q., Wiggins, A. K., Turnbull, K., & Curenton, S. (2012). Impact of professional development on preschool teachers' conversational responsivity and children's linguistic productivity and complexity. *Early Childhood Research Quarterly*, 27(3), 387-400.
- Pendergast, D., Garvis, S., & Keogh, J. (2011). Pre-service student-teacher self-efficacy beliefs: An insight into the making of teachers. *Australian Journal of Teacher Education*, 36(12), 46-58.
- McKee, B. E., & Dillenburger, K. (2012). Effectiveness of child protection training for pre-service early childhood educators. *International Journal of Educational Research*, 53, 348-359.
- Patterson, T. T., & Farmer, A. (2018). Classroom management self-efficacy of pre-service teachers. *World Journal of Educational Research*, 5(2), 134.

- Arsal, Z. (2014). Microteaching and pre-service teachers' sense of self-efficacy in teaching. *European Journal of Teacher Education*, 37(4), 453-464.
- Chou, C., Shen, T.-C., Shen, T.-C., Shen, C., & Liu, T.-L. (2023). Promoting pre-service teachers' AI-supported application of self-efficacy. 2023 IEEE 3rd International Conference on Software Engineering and Artificial Intelligence (SEAI), 261-265.
- Zach, S., Harari, I., & Harari, N. (2012). Changes in teaching efficacy of pre-service teachers in physical education. *Physical Education and Sport Pedagogy*, 17(5), 447-462.
- Martins, M., Costa, J., & Onofre, M. (2015). Practicum experiences as sources of pre-service teachers' self-efficacy. *European Journal of Teacher Education*, 38(2), 263-279.
- Gerde, H. K., Pierce, S., Lee, K., & Van Egeren, L. V. (2018). Early childhood educators' self-efficacy in science, math, and literacy instruction and science practice in the classroom. *Early Education and Development*, 29(1), 70-90.
- Ciftci, M. A., Ozgun, O., & Erden, S. (2011). Self-efficacy and satisfaction of pre-service early childhood education teachers as a function of perceived needs and experiences. *Procedia - Social and Behavioral Sciences*, 15, 539-544.
- Torbeyns, J., Verbruggen, S., & Depaepe, F. (2020). Pedagogical content knowledge in preservice preschool teachers and its association with opportunities to learn during teacher training. *ZDM*, 52(2), 269-280.
- Loomis, A., & Felt, F. (2020). Knowledge, skills, and self-reflection: Linking trauma training content to trauma-informed attitudes and stress in preschool teachers and staff. *School Mental Health*, 13(1), 101-113.
- Byington, T. A., & Kim, Y. (2020). Impact of a language and literacy training and coaching intervention on early childhood outcomes in low-income communities. *The Journal of Extension*, 58.
- Khotimah, N., Riyanto, Y., & Bachri, B. (2022). Implementation of blended learning to improve motivation and learning outcomes of pre-service early childhood teachers. *Journal of Educational and Social Research*.
- Szkolak-Stępień, A. (2020). Motivation of early childhood education teachers in the pursuit of pedagogical mastery. *MJSE*, 9(18), 61-78.
- Hazegh, M. (2020). Characteristics of effective early childhood leaders. *International Journal of Multicultural and Multireligious Understanding*, 7(8), 1-27.
- Kim, D. R. (2022). The effects of early childhood science education problem-based learning (PBL) classes on self-directed learning ability, academic self-efficacy, and learning motivation in prospective early childhood teachers. *Korean Society for Holistic Convergence Education*.
- Weadman, T., Serry, T., & Snow, P. (2022). The oral language and emergent literacy skills of preschoolers: Early childhood teachers' self-reported role, knowledge and confidence. *International Journal of Language & Communication Disorders*.
- Lee, L. (2023). Expectations and effectiveness of preschool teacher training program: A case study of teacher training course for the holistic music educational approach for young children. *SAGE Open*.
- Park, B., Lee, S., & Kim, H. (2023). A study on the core competence of teachers recognized by early childhood teachers. *Korean Association For Learner-Centered Curriculum And Instruction*.
- Jones, J., Hampshire, P. K., & McDonnell, A. P. (2020). Authentically preparing early childhood special education teachers to partner with families. *Early Childhood Education Journal*, 1-13.

- Myran, S., & Masterson, M. L. (2020). Training early childhood leaders: Developing a new paradigm for professional development using a practice to theory approach. *School Effectiveness and School Improvement*, 32, 173-196.
- Law-Davis, S. (2023). Early childhood teachers' confidence to teach religious education and the influences which impact their teaching of religious education in Catholic primary schools. *Religions*.
- Soini, A., Watt, A., & Sääkslahti, A. (2021). Finnish pre-service teachers' perceptions of perceived competence in early childhood physical education. *International Journal of Environmental Research and Public Health*, 18.
- Priyandita, I. S. (2021). A teacher's reflection on effective learning in early childhood. *Proceedings of the 5th International Conference on Early Childhood Education (ICECE 2020)*.
- Yang, W., Laakkonen, E., & Silvén, M. (2022). Closeness, conflict, and culturally inclusive pedagogy: Finnish pre- and in-service early education teachers' perceptions. *Frontiers in Psychology*, 13.
- Lewis, F., Edmonds, J., & Fogg-Rogers, L. (2021). Engineering science education: the impact of a paired peer approach on subject knowledge confidence and self-efficacy levels of student teachers. *International Journal of Science Education*, 43, 793-822.
- Chan, S., Maneewan, S., & Koul, R. (2021). An examination of the relationship between the perceived instructional behaviours of teacher educators and pre-service teachers' learning motivation and teaching self-efficacy. *Educational Review*, 75, 264-286.
- Tzafilkou, K., Perifanou, M. A., & Economides, A. (2022). Factors affecting teachers' transfer of ICT training: Considering usefulness and satisfaction in a PLS-SEM transfer training model. *Journal of Adult and Continuing Education*.
- Zhao, L., Liu, X., & Su, Y. S. (2021). The differentiate effect of self-efficacy, motivation, and satisfaction on pre-service teacher students' learning achievement in a flipped classroom: A case of a modern educational technology course. *Sustainability*, 13, 2888.
- Zincirli, M. (2021). Anxiety of not to be appointed as a predictor of pre-service teachers' motivation to teach. *International Journal of Psychology and Educational Studies*, 8, 191-203.