

FROM REACTION TO LEARNING: TEACHER SATISFACTION AS A POWERFUL PREDICTOR OF CONFIDENCE IN AN ECE TRAINING PROGRAM IN PAKISTAN

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DOI: <https://doi.org/10.5281/zenodo.16402833>

Received	Revised	Accepted	Published
19 April, 2025	08 May, 2025	25 July, 2025	24 July, 2025

ABSTRACT

Effective professional development is crucial for improving Early Childhood Education (ECE), particularly in resource-constrained contexts. However, evaluating the initial outcomes of such training is essential to ensure its impact. This study aimed to quantitatively evaluate an ECE training program in Pakistan by exploring the relationship between teachers' satisfaction (Kirkpatrick Level 1: Reaction) and their professional confidence (Level 2: Learning) across four key pedagogical domains. A cross-sectional survey was administered to a sample of 517 ECE-trained teachers in Khyber Pakhtunkhwa. The instrument measured satisfaction and confidence across the domains of Content Knowledge, Pedagogical Skills, Assessment Techniques, and Classroom Management. Data were analyzed using descriptive statistics, Pearson correlations, and simple linear regression. The findings revealed high mean scores for both satisfaction and confidence. A very strong, positive, and statistically significant correlation was found between satisfaction and confidence in all areas (r ranging from .892 to .923, $p < .001$). Crucially, regression analyses demonstrated that satisfaction was a powerful predictor of confidence, explaining between 79.6% and 85.1% of the variance. The study concludes that teacher satisfaction is not merely a superficial metric but a powerful leading indicator of perceived learning and professional confidence. These findings suggest that to build a foundation for behavioral change, training programs must prioritize creating a relevant, engaging, and positive experience for educators.

Keywords: Early Childhood, Teacher Training, Kirkpatrick Model, Confidence, Satisfaction, Teacher Feedbacks, Training Evaluation, Content Knowledge, Pedagogical Skills, Assessment Techniques, Classroom Management, Reaction, Learning.

INTRODUCTION

Early childhood is widely recognized as a critical phase in human development, during which foundational cognitive, social, and emotional skills are formed. The experiences and learning opportunities during these formative years lay the groundwork for future academic success, social competence, and overall well-being. High-quality

Early Childhood Education (ECE) provides stimulating environments that support this crucial development, with research consistently demonstrating that effective programs lead to better cognitive skills, stronger language abilities, and improved social-emotional regulation (Barnett, 2008; Heckman, 2011). Given its

profound long-term impact on individuals and society, investing in ECE and the professional development of its educators is a global imperative (Schweinhart et al., 2005).

While the expansion of ECE training programs, particularly in contexts like Pakistan, signifies a commitment to improving early learning, a critical problem persists: a significant and often disheartening gap between the pedagogical knowledge imparted during training and its consistent, effective implementation in the classroom. This "knowing-doing gap" (Pfeffer & Sutton, 2000) is a well-documented phenomenon in professional development, where teachers struggle to apply new methodologies with fidelity. In the ECE context, this challenge is compounded by formidable barriers. Teachers trained in interactive, play-based learning may revert to traditional methods when confronted with organizational realities such as severely overcrowded classrooms and a chronic lack of resources, social pressures from parents and communities, or personal challenges like low confidence and burnout. This mismatch between training ideals and ground-level realities undermines the purpose of professional development initiatives and limits potential improvements in children's learning experiences. To systematically evaluate the effectiveness of such training programs, the Kirkpatrick Four-Level Model provides a widely accepted framework. The model begins by assessing the immediate outcomes of training, starting with **Level 1 (Reaction)**, which measures how participants feel about the training, including their satisfaction with its content and delivery. This is followed by **Level 2 (Learning)**, which assesses the increase in knowledge, skills, and attitudes—including the crucial element of professional confidence—that results from the training. These first two levels are considered essential prerequisites for any subsequent changes in behavior and long-term results.

While existing literature has documented the general importance of teacher training, there remains an insufficient exploration of the relationship between these initial levels of training outcomes, particularly within under-resourced contexts. There is a pressing need to move beyond simply measuring teacher satisfaction and learning

as separate metrics and to rigorously quantify the relationship between them. Understanding the connection between a teacher's initial reaction to a program (satisfaction) and their perceived cognitive and affective gains (confidence) is critical for designing more effective and sustainable training. This study aims to address this knowledge gap by analyzing the link between Kirkpatrick's first two levels in an ECE teacher training program in Pakistan.

Therefore, this study was guided by the following primary objective and its corresponding research questions:

Objective: To explore ECE-trained teachers' perceptions of the training program's effectiveness by analyzing their satisfaction (Level 1) and confidence (Level 2) across the domains of Content Knowledge, Pedagogical Skills, Assessment Techniques, and Classroom Management.

- **RQ1:** What are the overall levels of satisfaction (Reaction) and confidence (Learning) reported by ECE-trained teachers regarding the training program?
- **RQ2:** How are teachers' satisfaction and confidence related across the specific training components of Content Knowledge, Pedagogical Skills, Assessment Techniques, and Classroom Management?

Methods

This study draws on the quantitative strand of a larger concurrent convergent parallel mixed-methods investigation designed to evaluate an ECE teacher training program in Pakistan. This paper specifically focuses on the quantitative data collected to assess teachers' satisfaction and confidence following the training.

Participants and Sampling

The study's population consisted of pre-service and in-service primary teachers in the province of Khyber Pakhtunkhwa (KP), Pakistan, who had participated in an ECE professional development program facilitated by the Directorate of Professional Development (DPD) and UNICEF. A multi-stage sampling approach was used, with data collected from nine districts to ensure a representative sample. The final sample

comprised $N = 517$ ECE-trained teachers who completed the survey. The demographic profile of the participants indicated a well-distributed and highly qualified group. The sample was almost evenly divided between male (50.7%) and female (49.3%) teachers. The vast majority were in their mid-career stages, with 45.6% aged 25-34 and 41.0% aged 35-44. Academically, the participants were highly qualified; the majority (74.3%) held a Master's degree as their highest qualification, with an additional 9.5% holding an MPhil degree. Geographically, the sample was primarily drawn from schools in rural settings (68.5%). In terms of professional experience, the largest group (41.8%) reported having 6 to 10 years of experience, followed by 28.2% with more than 11 years of experience, indicating that the sample predominantly consisted of seasoned educators.

Instrument

Data were collected using the Teacher Training Practices and Challenges Survey (TTPCS), which was meticulously designed based on the official training objectives. For the purpose of this paper, the key sections of the survey measured teachers' perceptions across four core training domains: **Content Knowledge, Pedagogical Skills, Assessment Techniques, and Classroom**

Management.

The instrument assessed two primary constructs aligned with the Kirkpatrick Model: **Satisfaction** (Level 1: Reaction) and **Confidence** (Level 2: Learning). Items were rated on a 5-point Likert scale. The psychometric properties of the instrument were rigorously established. All constructs demonstrated excellent internal consistency, with Cronbach's alpha values for the subscales ranging from .942 to .975. Construct validity was evaluated using Confirmatory Factor Analysis (CFA). The model demonstrated a good fit to the data, with key fit indices meeting established thresholds (CMIN/DF = 2.990; CFI = .902; RMSEA = 0.062). Furthermore, the average standardized factor loadings for all constructs were very high (ranging from 0.855 to 0.887), providing strong evidence of convergent validity and confirming

that the items effectively measured their intended latent constructs.

Data Analysis

Data were analyzed using SPSS. To address RQ1 (overall levels of satisfaction and confidence), descriptive statistics, including means, standard deviations, and skewness, were calculated for the composite scores of each domain. To address RQ2 (the relationship between satisfaction and confidence), Pearson correlation coefficients were computed to assess the strength and direction of the linear relationship between the two constructs for each of the four training domains. Subsequently, a series of simple linear regression analyses were conducted to determine the extent to which teacher satisfaction could statistically predict their confidence. A p-value of $< .05$ was considered statistically significant for all inferential analyses.

Results

This section presents the quantitative findings of the study. First, the psychometric properties of the survey instrument are reported. Next, descriptive statistics are provided to address RQ1a regarding the overall levels of teacher satisfaction and confidence. Finally, correlational and regression analyses are presented to answer RQ1b concerning the relationship between these two constructs across the four training domains.

Measurement Quality

Prior to the main analyses, the psychometric properties of the satisfaction and confidence scales were examined. As summarized in Table 1, all scales demonstrated excellent internal consistency, with Cronbach's alpha values ranging from .942 to .975. Average standardized factor loadings for all constructs were high (ranging from .855 to .887), supporting their convergent validity. These results confirm that the measurement instruments were both reliable and valid for this study.

Overall Levels of Satisfaction and Confidence (RQ1a)
To determine the overall levels of satisfaction and confidence reported by ECE teachers, descriptive statistics were calculated for the composite scores in each of the four training domains (see Table 1).

Teachers reported consistently high levels of satisfaction, with mean scores approaching or exceeding "Agree" (a score of 4.0) on a 5-point scale. The mean satisfaction scores were: Content Knowledge ($M = 3.99$, $SD = 1.11$), Pedagogical Skills ($M = 3.98$, $SD = 1.08$), Assessment Techniques ($M = 3.87$, $SD = 1.13$), and Classroom Management ($M = 3.93$, $SD = 1.13$).

Similarly, reported confidence levels were also high across all domains: Content Knowledge ($M = 4.01$, $SD = 1.10$), Pedagogical Skills ($M = 4.01$, $SD = 1.04$), Assessment Techniques ($M = 3.89$, $SD = 1.13$), and Classroom Management ($M = 3.98$, $SD = 1.11$). For all variables, negative skewness values indicated that the distribution of scores was clustered toward the higher end, reinforcing the finding of generally positive perceptions.

Relationship Between Teacher Satisfaction and Confidence (RQ2)

To investigate the relationship between teachers' satisfaction and confidence, Pearson correlation coefficients were first calculated. The analysis revealed a very strong, positive, and statistically significant linear relationship between satisfaction and confidence across all four domains:

- Content Knowledge: $r = .901$, $p < .001$
- Pedagogical Skills: $r = .892$, $p < .001$
- Assessment Techniques: $r = .898$, $p < .001$
- Classroom Management: $r = .923$, $p < .001$

To further examine this relationship, a series of simple linear regression analyses were conducted to determine if satisfaction significantly predicted confidence in each domain. The results, summarized in Table 1, showed that satisfaction was a powerful predictor of confidence across all four components.

For **Content Knowledge**, satisfaction significantly predicted confidence, $F(1, 515) = 2216.54$, $p < .001$, explaining 81.1% of the variance ($R^2 = .811$). For **Pedagogical Skills**, satisfaction also significantly predicted confidence, $F(1, 515) = 2012.13$, $p < .001$, accounting for 79.6% of the variance ($R^2 = .796$). In the domain of **Assessment Techniques**, satisfaction was a significant

predictor of confidence, $F(1, 515) = 2144.80$, $p < .001$, explaining 80.6% of the variance ($R^2 = .806$). Finally, for **Classroom Management**, satisfaction significantly predicted confidence, $F(1, 515) = 2952.38$, $p < .001$, explaining 85.1% of the variance ($R^2 = .851$). The standardized coefficients (β) were high and positive across all models (ranging from .892 to .923), confirming that satisfaction was a strong positive predictor. The unstandardized coefficients (B) indicated that for every one-unit increase in satisfaction, confidence increased by 0.860 to 0.906 units, depending on the domain. The strong linear relationship between satisfaction and confidence is visualized in Figure 1.

Discussion

This study investigated the relationship between ECE teachers' satisfaction with a professional development program and their subsequent confidence in applying its principles. The results revealed two key findings: first, teachers reported high levels of both satisfaction and confidence across all four training domains; and second, a robust and exceptionally strong positive relationship exists between these two constructs. Teacher satisfaction emerged as a powerful predictor of confidence, explaining between 79.6% and 85.1% of its variance, depending on the domain. This section will interpret these findings, connect them to relevant theory and literature, discuss the practical implications, and acknowledge the study's limitations.

Interpreting the Powerful Link Between Satisfaction and Confidence

The most significant finding of this study is the sheer magnitude of the relationship between satisfaction (Kirkpatrick Level 1) and confidence (Kirkpatrick Level 2). The exceptionally high R -squared values suggest that, for this cohort of teachers, their immediate reaction to the training was almost inseparable from their perceived learning and self-efficacy. This indicates that when teachers perceive a training program as relevant, engaging, and well-delivered, they are overwhelmingly likely to feel more confident in their ability to apply its content.

This finding powerfully validates the foundational importance of Kirkpatrick's Level 1 evaluation. While often dismissed as a superficial "happy sheet," this study demonstrates that teacher satisfaction is far from a trivial metric. Instead, it serves as a critical leading indicator of affective and cognitive learning. In a context where teachers face significant systemic challenges, a training program that respects their professionalism, addresses their practical needs, and provides a positive, empowering experience can create a profound motivational impact that directly translates into professional confidence. The positive emotional reaction appears to serve as a gateway, making teachers more receptive to internalizing new knowledge and building the self-efficacy needed to attempt new practices in their classrooms.

Connection to Theory and Literature

These findings are well-supported by established educational theories. The high levels of satisfaction align with principles of **Adult Learning Theory** (Knowles, 1980), which posits that adults are most receptive to learning that is problem-centered, relevant to their immediate context, and respects their prior experiences. The training's emphasis on practical, activity-based methods, as noted by participants, likely drove this positive reaction.

Furthermore, the strong link between satisfaction and confidence resonates with **Bandura's (1977) Self-**

Efficacy Theory. A positive and successful training experience can function as a "mastery experience," one of the most powerful sources of self-efficacy. When teachers feel satisfied, it reinforces the belief that the training was valuable and that they are capable of success, thereby boosting their confidence to implement new skills. The findings thus provide strong empirical support for the theoretical cascade from a positive reaction to an enhanced sense of professional capability. This study moves beyond the "knowing-doing gap" (Pfeffer & Sutton, 2000) by first quantifying the critical "feeling-believing" link that must precede any attempt to bridge it.

Implications for Practice

The

implications of this strong predictive relationship are significant for both training institutes and policymakers.

- **For Training Designers and Institutes:** The results underscore the need to design professional development that intentionally prioritizes the teacher experience. Focusing on clarity, contextual relevance, hands-on application, and creating a supportive, engaging atmosphere is not merely about making teachers "happy"; it is a direct and effective pathway to building their professional confidence. Training content and delivery methods should be co-designed with teachers to ensure they address the practical realities of their classrooms, particularly in under-resourced settings.

- **For Policymakers and Administrators:** This study suggests that satisfaction surveys should not be undervalued in the evaluation of large-scale training initiatives. They can serve as a powerful, cost-effective leading indicator of a program's potential success in achieving its learning objectives (Kirkpatrick Level 2). Consistently low satisfaction scores should be treated as a serious red flag, suggesting that a program is unlikely to build the teacher confidence necessary for eventual practice change.

Limitations and Future Research

Despite the compelling findings, several limitations must be acknowledged. First, both satisfaction and confidence were measured through **self-report**, which can be subject to social desirability bias. Teachers may have reported overly positive perceptions. Second, the study's **cross-sectional and correlational design** means that causation cannot be definitively inferred. While the logical and theoretical sequence is that satisfaction precedes confidence, other unmeasured variables, such as a teacher's general disposition, could influence both.

Most importantly, this paper focuses on Kirkpatrick Levels 1 and 2 and does not measure whether the reported high confidence translated into actual, sustained changes in classroom behavior (Level 3). This represents the well-known "knowing-doing gap."

These limitations point to a clear direction for **future research**. A longitudinal study is

needed to follow this cohort of confident teachers into their classrooms. Such research could investigate the extent to which high confidence predicts the application of child-centered pedagogies over time and identify the specific systemic factors—such as resource availability, school leadership, and peer support—that facilitate or hinder the translation of confidence into practice.

Conclusion

This study provides robust quantitative evidence that for ECE teachers in Pakistan, satisfaction with

professional development is a powerful and direct predictor of their professional confidence. The findings affirm that a teacher's emotional and evaluative reaction to training is a critical foundation for learning. To foster the confidence required to transform classroom practice, training programs must first succeed in creating a relevant, engaging, and positive experience for educators. This elevates the importance of teacher satisfaction from a simple feedback metric to a key strategic goal in the pursuit of quality early childhood education.

Table of Descriptive Statistics, Reliability, and Regression Results for Teacher Satisfaction and Confidence by Training Domain

Domain & Variable	Cronbach's α	Mean (SD)	r (with Confidence)	R ²	β	B
Content Knowledge	.970 / .974	3.99 (1.11) / 4.01 (1.10)	.901*	.811	.901*	0.890*
Pedagogical Skills	.942 / .975	3.98 (1.08) / 4.01 (1.04)	.892*	.796	.892*	0.860*
Assessment Techniques	.951 / .958	3.87 (1.13) / 3.89 (1.13)	.898*	.806	.898*	0.893*
Classroom Management	.963 / .967	3.93 (1.13) / 3.98 (1.11)	.923*	.851	.923*	0.906*

Note. N = 517. N Items, Cronbach's α , and Mean (SD) columns show values for Satisfaction / Confidence respectively. R², β , and B values represent regression models where satisfaction predicts confidence.
*p < .001.

Table 1. Descriptive statistics for overall Satisfaction and Confidence levels among early childhood teachers (N = 517). Satisfaction reflects perceived quality of training content; Confidence indicates teachers' perceived ability to apply this training in practice.

Table of Summary for Overall Satisfaction and Confidence Scores

Measure	N	Minimum	Maximum	Mean	Std. Deviation
Satisfaction	517	11.92	20.00	17.63	2.14
Confidence	517	12.00	20.00	17.79	1.95

The following bar chart shows the average overall Satisfaction and average overall Confidence

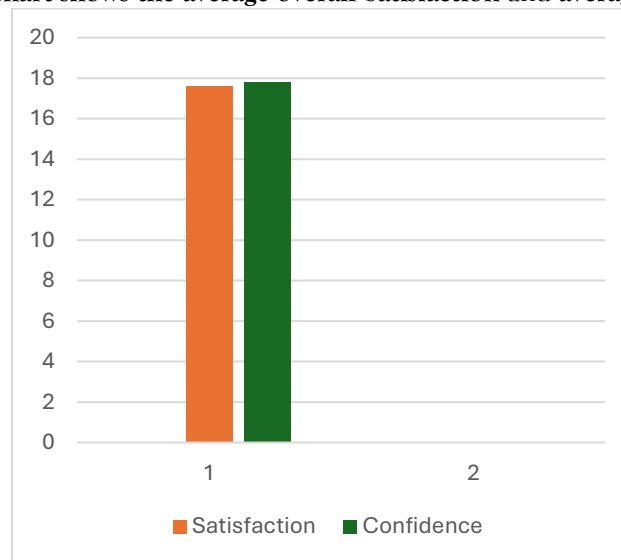


Figure 1-4 Scatter Plots with Regression Lines Showing the Relationship Between Satisfaction and Confidence Across Four Training Domains

i.e. Content Knowledge, Pedagogical Skills, Assessment Techniques and Classroom Management.

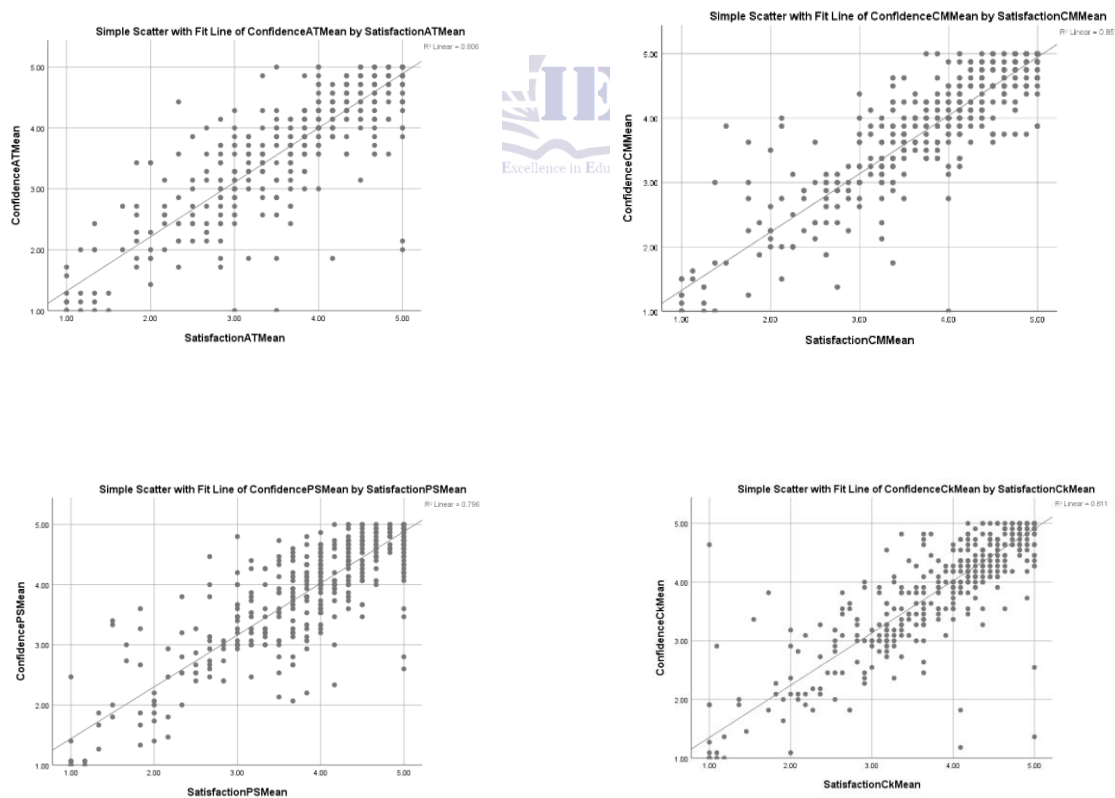
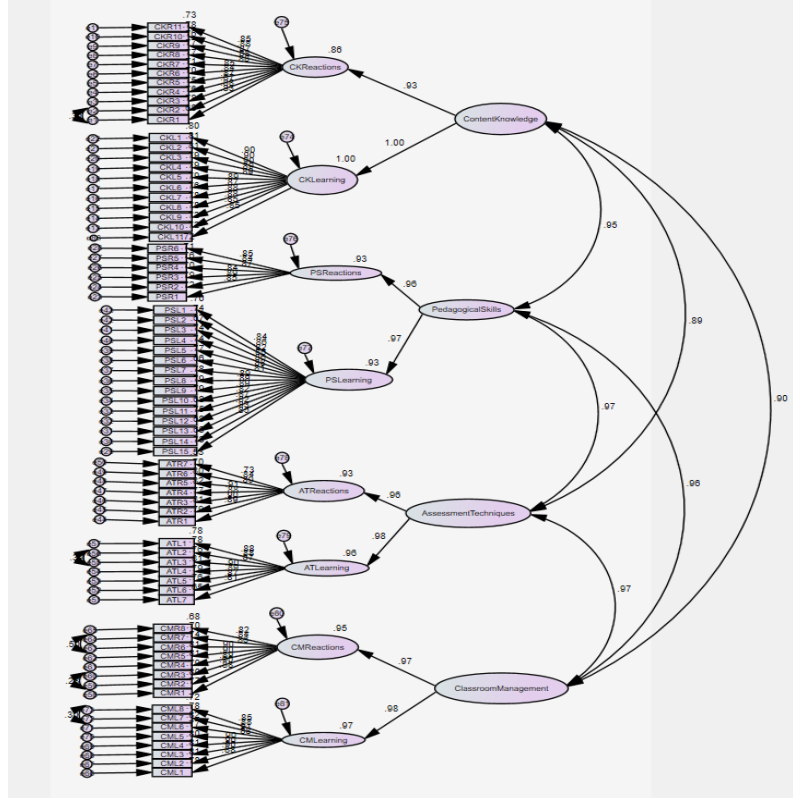


Table of Average Standardized Factor Loadings (λ) for First-Order Latent Constructs



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