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# Life skills for effective teaching: Assessing the development of teaching skills in teacher trainees

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Abstract: As educational environments become increasingly complex, need for teachers to possess a diverse set of competencies beyond academic knowledge. This study aims to assess the impact of life skill development programs on the teaching skills of teacher trainees across urban and semi-urban areas of Kerala, incorporating a diverse representation from both public and private teacher training institutes. The target population comprises approximately 150-200 teacher trainees who have participated in life skill development activities as part of their curriculum. A range of statistical instruments were used to find the relation between variables such as life skill development activities, assessment methods, learning styles, and cohort size and teaching skills. To evaluate improvements in teaching skills across different life skill development activities Kruskal-Wallis H Test was used. Additionally, Spearman's rank-order correlation test assessed the relationship between training frequency and teaching skill enhancement. The Mann-Whitney U Test compared the effects of formative and summative assessment methods on perceived skill acquisition, and ANOVA analyzed the influence of learning styles on engagement and outcomes in life skill programs. Finally, the Chi-Square Test investigated the association between cohort size and interaction quality among teacher trainees. The results underscore the necessity for educational institutions to prioritize life skill development as a core component of teacher training programs, ultimately enhancing the quality of education and preparing teacher trainees for the challenges of contemporary classrooms.

Keywords: Chi-square test, Learning styles, Life skill development, Structural equation modelling.

#### 1. Introduction

Teacher's roles in today's rapidly evolving educational environment go beyond simply conveying information; they are pivotal in shaping the competencies and attitudes of future generations [1]. As a result, teacher training programs have become increasingly essential in equipping prospective educators with not only academic knowledge but also crucial life skills that enhance their teaching effectiveness [2]. Life skills enhance psychosocial abilities, which help youth to handle the challenges and problems of day-to-day life. Life skills are those skills that enhance positive and productive development, including critical thinking, problem-solving, communication, and emotional intelligence, which are vital for fostering a conducive learning environment [3]. It supports us in adopting an optimistic outlook, avoiding depression in the face of adversity, lowering susceptibility and hazardous actions, fostering stronger relationships, and leading happier, healthier lives [4].

There are psychological problems in students or adolescents, such as alcoholism, drug abuse, violence, lack of self-esteem, suicide, aggression, inability to make proper decisions, solve problems effectively, and emotional instability [5]. These challenges not only affect their academic performance but also have long-term implications for their personal and social development [6]. Life skills programs have been shown to equip students with coping mechanisms and critical thinking abilities, enabling them to address these issues constructively [7]. Furthermore, the integration of life skills into educational curricula can foster a more supportive and inclusive learning environment, promoting resilience and well-being among students [8]. Studies consistently affirm that students who develop

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strong life skills are better prepared to make healthier decisions, manage stress, and build positive relationships with their peers and teachers [9].

By investigating the outcomes of life skill development initiatives, this study aims to provide empirical evidence on their effectiveness in enhancing teaching skills. It is imperative to understand how these programs aid in the comprehensive development of aspiring teachers, ultimately improving the quality of education delivered in schools. The findings of this research will not only inform but also contribute to the ongoing discourse on innovative approaches to teacher training in a 21st-century context. Through a mixed-methods approach, this paper seeks to evaluate the various dimensions of life skill development and its correlation with teaching skills, thereby highlighting the significance of including life skills in training for teachers. By doing so, we aim to highlight the transformative potential of such programs in preparing competent, resilient, and adaptable educators capable of meeting the challenges of contemporary teaching and learning environments.

#### 2. Related Works

Hasrat et al. [10] proposed a study, in order to determine whether life skills are integrated into elementary school curricula and to learn more about how elementary school teachers (ESTs) see the practical applications of life skills. A qualitative research methodology was used by the authors. Their study started by a document analysis to find out if the elementary curriculum includes life skills. They then conducted interviews with 25 ESTs to learn more about their opinions on how life skills are applied in real-world situations.

Hussain et al.'s study [11] examined how life skills instruction affected teachers' and students' mental health, social skills, and personal growth. Simple random sampling was used to gather data from 400 students and 100 teachers at four universities in District Rahim Yar Khan: KFUEIT RYK, IUB RYK Campus, NCBA&E RYK Campus, and Superior University RYK Campus. The study used a descriptive quantitative method. Data was gathered using two questionnaires: one with 50 items for students and another with 40 items for teachers. High levels of analysis were recorded, and which was done using SPSS version 23—showed that life skills education greatly improved the social and personal growth as well as the mental health of teachers and pupils. To offer a precise analysis of the data, descriptive statistics such as standard deviation, percentage, frequency, and mean were combined with inferential statistics like t-tests and one-way ANOVA.

The goal of Vijayalakshmi et al. [12] was to assess how well B.Ed. teacher trainee's life skills were developing and determine whether there were any notable variations in life skill levels based on factors such as gender, location, family structure, and parental qualifications. Using a straightforward random sampling procedure, 80 samples were gathered using the normative survey method. The Life Skill Evaluation Inventory, which consists of 59 items with a 5-point rating scale, was utilized by the researchers. In data analysis t-test, mean, and standard deviation, and F-ratio were used. The findings showed that B.Ed. teacher trainees had very high levels of life skills. At the 0.05 level, significant variations in life skills were discovered in relation to the kind of family and the parents' educational backgrounds. Furthermore, at the 0.01 level, the study discovered a statistically significant strong positive correlation between the life skills of B.Ed. teacher candidates.

The goal of Nair et al. [13] was to investigate the relation between students' personal effectiveness, competencies, and the life skills curriculum. Using self-reports derived from the life skills program and in-depth interviews, a qualitative research methodology was used. The participants were chosen at random from among first-year undergraduate students at Taylor's University in Malaysia who had successfully completed the life skills modules. The results showed how well life skills education improved students' interpersonal and social skills. According to the study, students thought that life skills development was very important, and the majority of them said that the program had helped them during the 14-week duration.

In order to increase student independence, Rohmah et al. [14] studied the life skills education curriculum at SMKN 2 Boyolangu, Tulungagung, and Al Huda Vocational School, Kediri City. The researchers used a cross-site phenomenological technique in conjunction with a qualitative method.

Interviews, participant observation, and documentation were used to gather data. The study employed several data analysis methodologies, such as cross-site analysis and single-case data analysis.

The goal of Suhra et al.'s study [15] was to show how the life skills education program at SMPN 2 Ajangale in Bone Regency assisted students in achieving gender equality. The study used both primary and secondary data, and it was classified as qualitative. To choose informants who were thought to have a thorough awareness of the situation, such as parent representatives, school principals, trained instructors, trainers, students, and purposeful sampling were used. Rather than directly from informants, secondary data were collected from significant research-related documents. The goal of Ghavanlo et al. [16] was to create life skills curricula for Iranian students pursuing higher education. The study used content analysis as part of a qualitative methodology. Targeted sampling was used to pick 15 written documents and 15 supervisors of living skills as participants. Open, axial, and selective coding were the three steps of the MAXQDA software's analysis of the data, which were gathered through semi-structured interviews.

A life skills intervention program was created by Choudhary et al. [17], and its impact on wellbeing was investigated. 107 female ninth-grade students were chosen at random by the lottery technique to comprise the sample. The students' well-being was evaluated using the "General Well-being Scale". According to the findings, during the pre-testing phase, the majority of students (51 students) showed poor levels of well-being; however, 43 students showed average levels of well-being following the intervention. In comparison, the control group did not experience any such alterations. In order to better understand the impact of life skill on the mental health of higher secondary students, Naqvi et al. [18] conducted a study that took gender and the type of education into account. The relationship between life skills and mental health was investigated in the study. A sampling strategy was used to choose a sample of 100 students from Lucknow, and a descriptive survey method was utilized.

#### 2.1. Research Gap

While the importance of life skills in general education has been acknowledged, there is a limitation in current studies that explore the direct correlation between life skill development and teaching effectiveness in teacher training programs. Most existing research focuses on subject knowledge and pedagogical techniques, overlooking the significance of communication, emotional intelligence, and problem-solving in improving classroom management and student engagement. Additionally, there was not enough thorough analysis on how different modes of program delivery affect the outcomes of these life skills programs. The influence of demographic factors like age, gender, and prior teaching experience on the effectiveness of life skill training also remains underexplored. This research aims to fill these gaps by examining how various components of LSDP, and demographic factors influence the teaching skills of teacher trainees, providing new insights into the integration of life skills in teacher education.

## 3. Research Questions

- i. What is the relationship between the type of life skill development activities (workshops, group discussions, role-playing exercises) and the teaching skills of teacher trainees?
- ii. How does the frequency of training sessions affect the teaching skills of teacher trainees?
- iii. What is the impact of different assessment methods (formative vs. summative) on the perceived skill acquisition of teacher trainees?
- iv. How do the preferred learning styles of teacher trainees affect their engagement and outcomes in life skill development programs?
- v. What is the relationship between cohort size and the level of interaction among teacher trainees, and how does this influence their teaching skills?
- vi. What is the role of demographic factors (Gender, Age Group, Educational Background, Teaching Experience, Motivation Level, Resilience Level) in moderating the impact of the LSDP on teaching skills?

# 4. Research Objectives

- i. To investigate how demographic factors such as gender, age, educational background, and prior teaching experience influence the effectiveness of the LSDP on improving teaching skills
- ii. To evaluate the effectiveness of various life skill development activities (workshops, group discussions, role-playing exercises) in enhancing the teaching skills of teacher trainees.
- iii. To explore the relationship between the frequency of life skill training sessions and the enhancement of specific teaching competencies among teacher trainees.
- iv. To evaluate how different assessment methods (formative vs. summative) impact the perceived skill acquisition and confidence of teacher trainees post-LSDP.
- v. To identify the preferred learning styles of teacher trainees and their influence on the effectiveness of different types of life skill development activities in improving teaching skills.
- vi. To investigate the relationship between cohort size and the quality of interaction among teacher trainees and how this affects their development of teaching skills.

# 5. Research Hypothesis

*H<sub>1</sub>:* There is a significant difference in the improvement of teaching skills among teacher trainees based on the type of life skill development activities they participate in (workshops, group discussions, role-playing exercises), with role-playing exercises having the most positive impact.

 $H_2$ : Increasing the frequency of training sessions is positively correlated with the enhancement of teaching skills in teacher trainees.

 $H_3$ : The type of assessment methods used (formative vs. summative) significantly affects the perceived skill acquisition of teacher trainees.

 $H_4$ : Teacher trainees' preferred learning styles significantly influence their engagement and outcomes in life skill development programs.

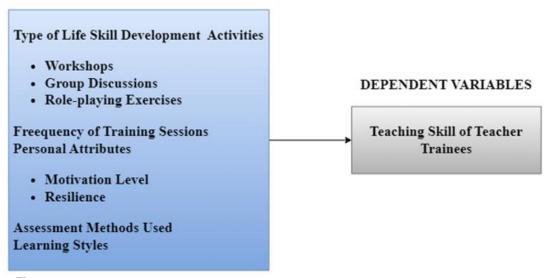
 $H_5$ : A larger cohort size negatively affects the level of interaction among teacher trainees, leading to less effective teaching skills development.

# 6. Research Methodology

## 6.1. Conceptual Framework

The relationship between several independent variables (type of life skill development activities, frequency of training sessions, assessment methods, learning styles, and cohort size) and the dependent variable (teaching abilities of teacher candidates) forms the basis of this study's conceptual framework. The model assumes that these independent variables directly or indirectly influence teaching skill acquisition and development. The interaction between life skill development activities, as well as the assessment methods and cohort size, are explored. The framework illustrates the dynamic interplay between these factors and their collective impact on enhancing teaching skills among teacher trainees. Figure 1 illustrates the conceptual framework of the proposed system.

#### INDEPENDENT VARIABLES



**Figure 1.** Conceptual framework of proposed system.

#### 6.2. Research Design

Integrating quantitative and qualitative techniques, a mixed-methods research design was used for this study. Data collected through structured questionnaires to measure the effectiveness of life skill development activities, frequency of training sessions, and teaching skills. The qualitative component involves focus groups or interviews to explore deeper insights into how these activities and individual attributes influence teaching skills development.

#### 6.4. Data Collection

Data collection was carried out through structured questionnaires and semi-structured interviews. These questionnaires capture information on the frequency of training sessions, preferred learning styles, and teaching skills. Interviews are conducted to gain qualitative insights into the impact of various life skill development activities, cohort size, and personal experiences regarding assessment methods. The data collection process spans 3-4 months to gather sufficient information.

#### 6.5. Designing of Questionnaire

The questionnaire was designed using a combination of closed-ended and Likert scale questions to quantitatively measure the relevant variables. Each independent variable, such as the type of life skill development activities, frequency of training sessions, are addressed with a dedicated set of questions. Specifically, questions related to life skill activities inquire about the perceived effectiveness of various methods, including workshops, group discussions, and role-playing exercises. To assess the frequency of training, participants are asked to indicate the number of sessions they have attended per week or month. The questionnaire also includes items that gauge the trainees' perceptions of different assessment methods, distinguishing between formative and summative evaluations. Questions regarding cohort size focus on understanding the levels of interaction among trainees and the overall effectiveness of their learning experiences.

# 6.6. Sampling Area and Population

The sampling area focuses on teacher training institutes across urban and semi-urban areas of Kerala. The target population consists of teacher trainees who have undergone life skill development programs as part of their curriculum from different educational backgrounds and varying levels of experience. Both public and private teacher training institutions are included to ensure diverse representation.

# 6.7. Sample Size and Sampling Techniques

Using statistical power analysis, a sample size of approximately 150-200 teacher trainees is targeted to ensure the study has sufficient statistical power to detect significant effects. To guarantee coverage from a range of subgroups, the sample was stratified based on important demographic factors such age, gender, educational background, and teaching experience. Random sampling was applied to select participants from different training institutes.

# 6.8. Statistical Tool for Analysis

In this study, a range of statistical tools were utilized to explore the relationships between the independent variables, and the dependent variable. To evaluate differences in teaching skill improvement across various life skill development activities (workshops, group discussions, and role-playing exercises), Kruskal-Wallis H Test was applied. It helped in identifying which activity type led to the most significant improvement in teaching skills. Spearman's rank-order correlation test, Mann-Whitney U Test, ANOVA, Chi-Square Test are the main tests among them.

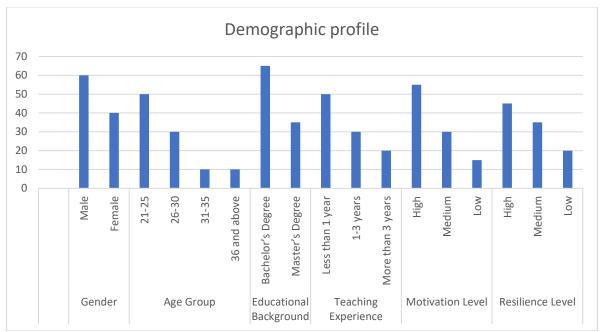
# 7. Result and Analysis

# 7.1. Demographic Distribution

Demographic distribution refers to the statistical analysis and visual representation of different characteristics of a population. Table 1 and Figure 2 present the demographic distribution of the study participants, providing an overview of key characteristics such as gender, age, educational background, and institution type among the teacher trainees involved in the life skill development programs.

**Table 1.** Demographic distribution.

Demographic factor	Category	Percentage (%)
Gender	Male	60%
	Female	40%
Age group	21-25	50%
	26-30	30%
	31-35	10%
	36 and above	10%
Educational background	Bachelor's degree	65%
_	Master's degree	35%
Teaching experience	Less than 1 year	50%
	1-3 years	30%
	More than 3 years	20%
Motivation level	High	55%
	Medium	30%
	Low	15%
Resilience level	High	45%
	Medium	35%
	Low	20%



**Figure 2.** Demographic distribution.

The demographic distribution of the study sample indicates that the majority of teacher trainees were male (60%) and the remaining 40% were female. The age distribution reveals that half of the participants fell into the 21-25 age group (50%), followed by 30% in the 26-30 group. The least represented groups were those aged 31-35 and 36 and above, each accounting for 10% of the sample. In terms of educational background, 65% of participants held a bachelor's degree, while the remaining 35% had a master's degree. When it comes to teaching experience, the largest group (50%) had less than 1 year of experience, while 30% had 1-3 years of experience, and 20% had more than 3 years.

Motivation levels were generally high, with 55% of trainees reporting high motivation to improve their teaching skills, while 30% reported medium motivation, and 15% indicated low motivation. Similarly, resilience levels were spread out, with 45% of the trainees exhibiting high resilience, 35% medium resilience, and 20% low resilience. This demographic breakdown highlights a relatively young and predominantly male sample with a large proportion of individuals in the early stages of their teaching careers. The high levels of motivation and resilience among many participants suggest a strong foundation for engagement in life skill development programs. However, the variation in teaching experience and resilience plays a role in how different individuals respond to the life skills interventions. Understanding these demographic characteristics is crucial for interpreting the effectiveness of life skill development programs in this study.

## 7.2. Kruskal-Wallis H Test Results

Table 2, shows the impact of various life skill development activities, such as workshops, group discussions on teacher skills, evaluated using the Kruskal-Wallis H Test to determine significant differences in skill enhancement among the activities.

**Table 2.** Impact of different types of life skill development activities on teacher skill using Kruskal-Wallis H Test.

Group	Mean improvement score	Standard deviation
Workshops	73.12	9.00
Group discussions	68.55	11.17
Role playing	80.10	7.94

Test statistic:19.12 p-value: 0.00007

The results revealed significant differences among the groups, demonstrating the highest mean improvement score of 80.10. In comparison, the workshops and group discussions had mean scores of 73.12 and 68.55, respectively. The test yielded a statistic of 19.12 and a p-value of 0.00007, indicating strong statistical significance. Given that the p-value is considerably lower than the conventional threshold of 0.05, concluding that the type of life skill development activity significantly influences the enhancement of teaching skills among trainees. These findings suggest that integrating these training programs could be particularly effective in improving the teaching skills of teacher trainees, highlighting the importance of engaging, interactive learning methods in educational settings.

## 7.3. Spearman's Rank-Order Correlation Test

Table 3, and Fig. 3 illustrate the impact of the frequency of life skill development training sessions on teacher trainees, using Spearman's rank-order correlation test.

**Table 3.** Impact of frequency of life skill development training sessions on teacher trainees using spearman's rank-order correlation test.

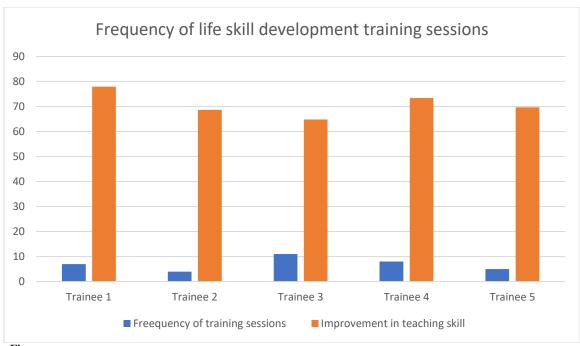
Trainee	Frequency of training sessions	Improvement in teaching skills
Trainee1	7	77.91
Trainee 2	4	68.64
Trainee 3	11	64.78
Trainee 4	8	73.38
Trainee 5	5	69.66

Spearman's correlation coefficient ( $\rho$ ): 0.141

p-value: 0.330

The Spearman's Rank-Order Correlation test was conducted to explore the relationship between the frequency of life skill training sessions and the improvement in teaching skills of teacher trainees. The correlation coefficient (rho) was found to be 0.141, indicating a weak positive correlation between the frequency of sessions and the improvement in teaching competencies. However, the p-value of 0.330 is higher than the conventional significance level of 0.05, which suggests that the observed correlation is not statistically significant.

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**Figure 3.** Relationship between the frequency of LSDP sessions and teaching skills.

## 7.4. Mann-Whitney U test

Table 4, illustrates the results of the Mann-Whitney U test, highlighting the differential impact of various assessment methods employed in life skill development programs (LSDP) on the teaching skills of trainees.

**Table 4**. Impact of LSDP assessment methods on teaching skill using Mann-Whitney U test.

Group	N	Median of perceived skill acquisition	Mean rank
Formative assessment	30	75	35.6
Summative assessment	30	60	25.4
Mann-Whitney U test		U = 297.5	p < 0.05

In the proposed study, this test was conducted to evaluate the difference in perceived skill acquisition between trainees who underwent formative and summative assessments post-LSDP. The results indicated a notable distinction between the two groups (U=297.5, p<0.05), suggesting that formative assessments were associated with higher levels of perceived skill acquisition (median = 75) compared to summative assessments (median = 60). The mean rank of perceived skill acquisition was higher in the formative assessment group compared to the summative assessment group, indicating that trainees perceived they acquired more skills when formative assessments were used. This finding suggests that formative assessments, which provide ongoing feedback and opportunities for improvement, are more effective at fostering perceived skill acquisition among teacher trainees than summative assessments, which evaluate skills at the end of the training. Incorporating formative assessments into life skill development programs may therefore be crucial for improving trainees' confidence and perceived learning outcomes.

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## 7.5. *ANOVA*

Table 5, presents the findings from the ANOVA analysis, demonstrating the significant influence of different learning styles on the teaching skills of trainees, indicating varying levels of engagement and effectiveness across visual, auditory, and kinesthetic learning preferences.

**Table 5.** Influence of learning styles on teaching skill using ANOVA.

Source of variation	Degrees of freedom	Sum of squares	F-value	Mean square	p-value
Between groups (Learning styles)	2	15.48	4.52	7.74	0.013
Within groups (Error)	29	49.75		1.71	_
Total	31	65.23			

This suggests that there is a statistically significant difference in the effectiveness of life skill development activities based on the trainees' preferred learning styles. Teacher trainees with different learning styles (visual, auditory, or kinesthetic) engage with and benefit from the activities differently, which in turn impacts their teaching skill development. Specifically, the results indicate that learning style plays a role in how effectively trainees engage in and benefit from the program, confirming the hypothesis (H5) that preferred learning styles significantly influence engagement and outcomes in life skill development programs.

# 7.6. Chi-Square Test

The Chi-Square test was performed to investigate the relationship between cohort size (small, medium, and large) and the quality of interaction among teacher trainees and how it influences their teaching skills development. Table 6, summarizes the results of the Chi-Square Test, revealing a significant impact of cohort size on the quality of interaction among teacher trainees, which in turn affects their teaching skills, as illustrated in Fig. 4, highlighting the interconnectedness of these variables within the life skill development program.

**Table 6.** Impact of cohort size in LSDP using chi-square test.

Cohort size	High quality of interaction	Low quality of interaction	Total
Small (≤ 20)	18	2	20
Medium (21-40)	15	5	20
Large (> 40)	8	12	20
Total	41	19	60

Chi-Square ( $\chi^2$ ):10.78 Degrees of Freedom:2 p-value: 0.0045

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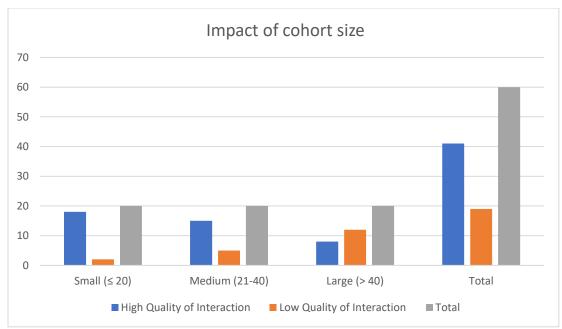


Figure 4.

Relation between Cohort size, quality of interaction among teacher trainees and teaching skill

The results show that as cohort size increases, the quality of interaction decreases, with smaller cohort sizes ( $\leq$  20) having the highest proportion of trainees reporting high-quality interaction (18 out of 20), while larger cohort sizes (> 40) have the lowest quality of interaction (8 out of 20). This supports the hypothesis (H6) that larger cohort sizes negatively affect interaction levels, which in turn leads to less effective teaching skills development among teacher trainees.

# 8. Conclusion

This study highlights the critical role that life skill development programs play in shaping the teaching competencies of teacher trainees, particularly in the evolving educational landscape of Kerala. By exploring the impact of various life skill activities, assessment methods, learning styles, and cohort size on teaching skills, the findings underscore the need for a holistic approach in teacher education. The Kruskal-Wallis H Test revealed that different life skill activities contribute uniquely to the development of teaching skills, with role-playing exercises demonstrating the most significant impact. The Spearman's Rank-Order Correlation Test further established a positive relationship between the frequency of training sessions and teaching skill enhancement. The study found that the type of assessment method like formative or summative has a significant influence on perceived skill acquisition, as revealed by the Mann-Whitney U Test. The ANOVA analysis demonstrated that learning styles (visual, auditory, and kinesthetic) considerably impact engagement and outcomes, emphasizing the importance of tailored learning approaches in life skill training. Lastly, the Chi-Square Test confirmed that larger cohort sizes negatively affect interaction quality, which in turn influences the effectiveness of teaching skill development. These findings suggest that educational institutions must prioritize the integration of life skills into teacher training curricula to better equip teacher trainees for modern classroom challenges. Policymakers and educational leaders should consider these insights when designing teacher education programs, ensuring that life skill development is viewed as essential, rather than supplementary, to academic and professional training. The study's recommendations for enhanced teacher training methodologies aim to produce a new generation of educators who are not only academically proficient but also resilient, adaptive, and capable of fostering positive learning environments.

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