Policy Research Journal
ISSN (E): 3006-7030 ISSN (P) : 3006-7022 Volume 4, Issue 3, 2026

QUALITY OF EARLY CHILDHOOD EDUCATION: A GENDER-WISE COMPARISON OF ASSISTANT EDUCATION OFFICERS' PERCEPTIONS IN GOVERNMENT SCHOOLS OF PUNJAB

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DOI: https://doi.org/10.5281/zenodo.19128889

Keywords
Early Childhood Education, quality indicators, Assistant Education Officers, gender-wise perceptions, public schools, Punjab

Article History
Received: 21 January 2026
Accepted: 05 March 2026
Published: 20 March 2026

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Abstract

Quality of Early Childhood Education (ECE) is essential for the overall development of a child because 80% of brain development occurs before the age of five. It improves cognitive, emotional and social skills and lays the foundation for good preparation for life such as (school, better long-term economic and social prospects). The study is aimed at comparing perceptions of male and female Assistant Education officers (AEOs) responsible for ensuring quality of ECE in public sector elementary schools of Punjab. The sample was comprised of 250 Assistant Education Officers (128 male and 122 female) employed as a sample from nine districts of Punjab province, Pakistan, selected using proportionate random sampling technique. Four main quality indicators of ECE - namely, physical environment, capable teachers and caregivers, support material, and parent and community engagement, were included in the study. The perceptions are measured with the help of a structured questionnaire on a five-point Likert-type scale. It was found that the overall quality of ECE was high; the perceptions of AEOs favoured to physical learning environment and access to support materials in comparison to other two indicators. The attitudes towards teachers and caregivers were also positive, but in comparison to classroom environment and materials, it was lower. Parent and community engagement, on the other hand were the lowest aspect, which also implies a lack of co-operation and involvement in school activities beyond the routine. Gender-wise comparison indicates that there were differences in perceptions in a variety of areas and this indicates the need to have uniform standards of supervision and mutual monitoring practices. The study concludes that while making efforts to enhance quality of ECE, issues to be resolved focusing family-school partnerships, community support, and in supervisory alignment, which seem to be more powerful when delivered in the classrooms.

INTRODUCTION

Early childhood education (ECE) is generally considered the most developmental stage of schooling as it determines the cognitive, language, socio-emotional, and self-regulation backgrounds of children that further determine their future learning patterns. With the increasing access of programs of pre-primary programs all around the world, the policy discussion has gone beyond the number of children enrolled to the quality of

experiences they get since presence alone does not translate into developmental benefits unless the quality of the provision is high (Chen & Wolf, 2021). This is a critical difference in the situation of the public systems where ECE is implemented rapidly in a wide range of communities, which is usually accompanied by the limitation of resources and teacher training, classroom facilities, and uneven implementation. Quality, in that case, be the lever that ECE use to minimize early learning gaps or recreate them unintentionally.

Quality in the context of ECE is a multi-dimensional concept which is often presented by two interconnected aspects which are structural quality and process quality. Structural quality is the comparatively stable and manageable provisions such as classroom space and safety, learning materials, teachers' qualification, ratios and institutional supports whereas the process quality is what children actually undergo in their day-to-day activities; teacher-child interaction, emotional climate, teaching practices and interaction with learning materials. Syntheses of evidence indicate that both structural and process characteristics are significant to child outcomes and frequently process quality becomes the best direct route to child learning and development (Suchodoletz, Lee, Henry, Tamang, Premachandra, & Yoshikawa, 2023). Nonetheless, the quality of structure may facilitate or limit the quality of processes; that is, an improved learning environment, sufficient resources, and reasonable ratios are more likely to trigger responsive interactions and meaningful activities. Empirical research also suggests that some structural variables (e.g. group size and child-to-adult ratio) can be reliably correlated with classroom experiences of children, even though other structural predictors exhibit weaker ties (Hanno et al., 2021). Since quality is not an isolated attribute but is a regime of interrelating conditions and practices, there is a growing consensus among researchers that it should be perceived and measured in a variety of indicators instead of a single attribute (McLean et al., 2023). The quality measurement and improvement of ECE is more complex in low- and middle-income settings. Most popular observation instruments and quality models were initially created in high-income settings, and they might not represent local curricular aims, cultural desires, or the realities of working in a classroom in the public sector. According to Chen and Wolf (2021), to monitor quality in LMICs, the balance between theoretical background, adaptation to the local context, and empirical rigor is particularly important when the systems are based on the self-report perceptions because of the lack of resources to monitor them on a large scale. In other related literature on stakeholder views, researchers reveal that various groups (such as supervisors, administrators, teachers, and families) tend to align on certain fundamental quality expectations trained teachers, learning materials, safe settings, and family relations but also point at discrepancies between the desired standards and practical practices (Davis et al., 2021). This highlights the importance of perception-based tests in that when well-crafted and interpreted they can be a great source of feedback about a system especially when the supervisory personnel have been exposed to school realities in numerous locations.

The system of the public-schools in Punjab has put a strain on ECE during the last decade trying to make the access of the given sphere more accessible and powerful in order to enhance the experience of the early learning in state-schools. However, the implementation is often hampered by the challenges that can be predicted: disparity in classroom preparedness, inconsistency in teacher preparation toward developmentally appropriate practice, learning materials limitations, leadership support and community engagement differences. An evaluation of the reform experience of ECE in Punjab reports the opportunities, as well as the chronic bottlenecks as ECE is expanded across schools, which implies that to strengthen the system, it is necessary to go beyond enrolment goals and focus on the daily conditions and practices that constitute quality (Ansari et al., 2023). Quality in such a context is both a classroom problem as well as a governance issue that requires how well the system sustains teachers, provides classroom support, and controls

the implementation as well as reacting to gaps found during supervision.

Here, the Assistant Education Officers (AEOs) be a very pertinent prism within the context of explaining the quality of ECE in Punjab. AEOs are field-level supervisory staff, and thus can engage with schools by observing, advising, and administratively supervising schools; their professional capacity puts them in a position to see patterns in classrooms and to make judgments as to whether or not core quality inputs and practices exist. Although teacher/parent-based perceptions are useful, AEOs offer a system level view that has the potential to bridge the gap between classroom realities and administrative processes, resource allocation, and implementation fidelity among schools. This may be particularly beneficial in LMICs, where formal observational monitoring at a large scale may be challenging and where supervisory perceptions can be put into practice as an action signal of which indicators of quality are consistently weak and where support strategies are most likely to be effective (Chen & Wolf, 2021).

In the wider quality literature, four domains are recurrently seen to be at the core of successful early learning; (a) the physical and learning space, (b) the skills and readiness of the adult labor force, (c) the access to and utilization of developmentally suitable learning resources, and (d) family and community engagement that strengthens children learning and wellbeing. According to the stakeholder research, the most frequently mentioned pillars of quality are trained teachers who apply certain teaching practices, critical infrastructure, strong family and community partnerships, and government support (Davis et al., 2021). Likewise, global practices indicate that the quality improvement initiatives must focus on the structural conditions that facilitate the classroom environment as well as the process attributes that define the daily experiences of children (Suchodoletz et al., 2023). These areas are very consistent with what is being practiced as a reform priority in the public systems: classroom readiness and safety, teacher preparation and coaching, the accessibility of learning materials, their utilization, and the development of meaningful partnerships between schools and families.

Another aspect that goes uninvestigated extensively in the quality monitoring is the differences in the perception of the actors within the education system of different genders. The monitoring emphasis, priority-setting and recommendations cascading upwards into planning and policy are not just opinions but perceptions can form them. Research on "quality" definitions demonstrates that stakeholders' understandings of quality can be influenced by the policy environment and by professional experiences within regulated systems, which can vary across groups (Rogers et al., 2026). In bureaucratic education settings, gender may intersect with professional socialization, communication patterns, field experiences, and expectations regarding school readiness or classroom management potentially leading male and female officers to rate the same conditions differently. Exploring gender-wise perceptions is therefore not framed as "one gender being right," but as identifying whether systematic differences exist that may affect how quality is monitored, interpreted, and acted upon across the system.

Accordingly, the present study investigates the quality of early childhood education in public schools of Punjab through the gender-wise perceptions of Assistant Education Officers. It focuses on perceptions of four core indicators physical environment, qualified teachers/caregivers, support material, and parent/community engagement because these domains represent actionable levers for quality improvement and align with widely recognized components of ECE quality in both global and LMIC-focused research (Chen & Wolf., 2021; McLean et al., 2023). By comparing male and female AEOs' perceptions, the study aims to generate evidence that can inform targeted professional development, more consistent supervision practices, and improvement planning for ECE implementation across districts. In a province where ECE has been scaled and institutionalized, strengthening quality requires not only identifying gaps but also understanding

how those gaps are perceived by the very actors responsible for monitoring and supporting schools (Ansari et al., 2023).

Objectives

1. To explore the overall perceived quality of Early Childhood Education (ECE) in public schools of Punjab.
2. To compare male and female AEOs' perceptions across the four quality indicators, physical environment, qualified ECE teachers/caregivers, support material, and Parent & Community Engagement.

Hypotheses

Ho1: There is no significant difference between male and female AEOs as regards their perceptions about the overall ECE quality in public sector schools of Punjab.

Ho2: There is no significant difference between male and female AEOs as regards their perceptions about the Physical Environment for ECE classrooms.

Ho3: There is no significant difference between male and female AEOs as regards their perceptions about the Qualified ECE Teachers/Caregivers.

Ho4: There is no significant difference between male and female AEOs as regards their perceptions about the Support Material for ECE.

Ho5: There is no significant difference between male and female AEOs as regards their perceptions about the Parent & Community Engagement for ECE.

Questions

1. What is the overall quality status of ECE in public schools of Punjab according to AEOs?
2. How male and female AEOs differ significantly in their perceptions of each ECE quality indicator: Physical Environment, Qualified Teachers/Caregivers, Support Material, and Parent & Community Engagement?

Theoretical Framework

This research study based on the multidimensional conceptualization of quality in Early Childhood Education and Care (ECEC) which views quality as a combination of structural quality and process quality, in a particular system context. Structural quality is the comparatively observable and manageable resources of ECE like the tangible classroom setting, safety, the materials available to support its activities, and staff credentials, whereas process quality describes lived experiences within classrooms, including the methods used to support, engage with, and guide children in the way they practice developmentally. Due to the scale-dependent problem of observing process quality, education systems tend to use structured measures and stakeholder opinions of whether foundational inputs and enabling conditions exist, particularly in low- and middle-income contexts where large scale observational monitoring is not feasible (Chen &Wolf, 2021).

In line with modern evidence, this framework presupposes that the high-quality ECE is not a one-dimensional feature, but a complex set of circumstances that condition children with learning opportunities. Evidence of global synthesis indicates that not only are structural characteristics (e.g., staff and classroom conditions) but also process-related indicators (e.g., stimulation and interactions) significantly related to the developmental outcomes of children, which again confirms the importance of measuring quality using multiple indicators as opposed to a single score (Suchodoletz et al., 2023). Also, this is highlighted by the contextually specific perception of quality which is noted by the stakeholder-oriented research that quality is partly constructed by the manner in which system actors interpret and prioritize its constituents (Saglam et al., 2023).

The theoretical framework applied in this research is operationalized by using four measurable indicators in line with structural/system enablers of quality, (1) Physical Environment, (2) Qualified Teachers/Caregivers, (3) Support Material, and (4) Parent and Community Engagement. These are precursors of the notion that quality arises when schools create enabling conditions, quality human resource, sufficient learning resources and positive family-community connections (Saglam et al.,

2023). Lastly, the framework also includes a gender-based perception lens because evaluative judgements in education may vary by gender systematically because of differences in professional experiences and systems of judgements (Olczyk et al., 2023).

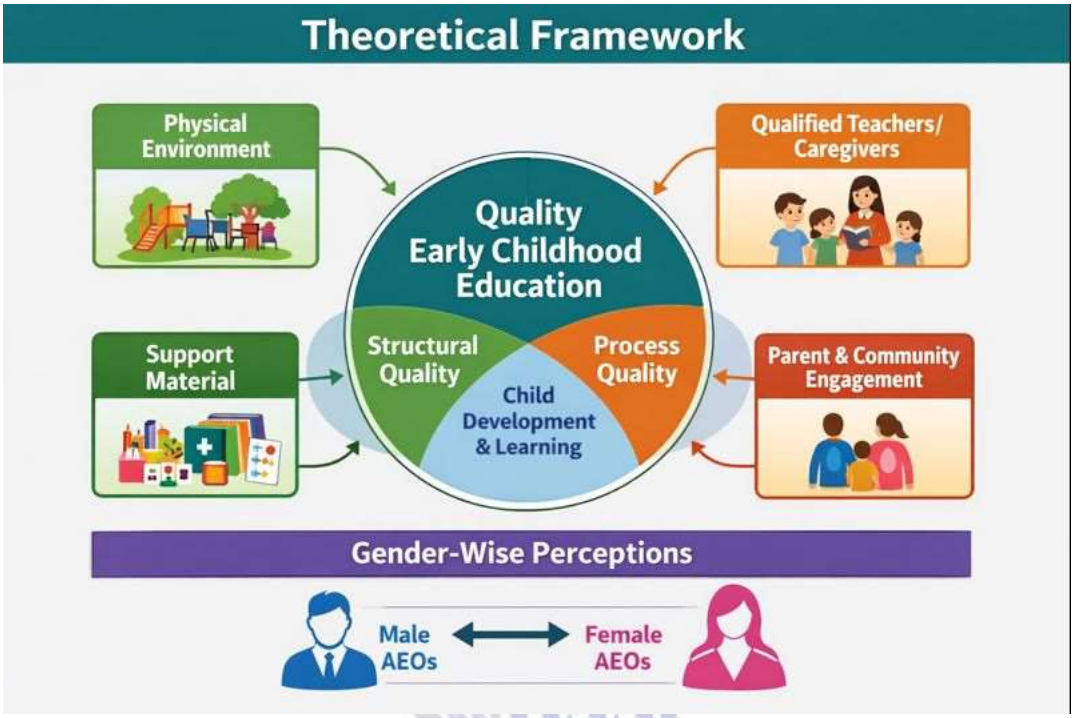

Figure 1: Theoretical Framework of the Study

Research Methodology

The study was quantitative, cross-sectional and descriptive-comparative survey design was used to determine the perceived quality of ECE in the Punjab public schools and to compare gender-based perceptions of the Assistant Education Officers (AEOs). The use of Quantitative method is appropriate since it be possible to systematically measure perceptions using standardized items and, in turn, make a statistical analysis between two independent groups (male vs female) to compare them with the help of inferential tests.

Population for the Study

Population of the study included all the Assistant Education Officers (AEOs) that were in the service of public schools in nine districts (Lahore, Kasur, Faisalabad, Chiniot, Gujranwala, Hafizabad, Sahiwal, Pakpattan and Sargodha) of the Punjab. All these districts comprised a total population of 668 AEOs (339 male and 329 female). The size of the population suitable to the current study since the AEOs are critical to the school monitoring and support activities and they regularly monitor the conditions of classroom implementation of ECE. Their perceptions hence give system level insight into the availability and functioning of key quality inputs and enabling conditions of ECE. The population is spread in several districts and therefore reflects diversity in the school settings and conditions of implementation. To reveal the coverage of the research setting, the population table of the study shows the population distribution (male, female, and total) in the districts.

Table 1
District-Wise Male and Female Population Distribution

Sr. No	Districts	AEOs		
		Male	Female	Total
1	Lahore	26	25	51
2	Kasur	39	42	81
3	Faisalabad	63	51	114
4	Chiniot	41	5	46
5	Gujranwala	32	55	87
6	Hafizabad	25	27	52
7	Sahiwal	40	40	80
8	Pakpattan	29	25	54
9	Sargodha	44	59	103
	Total	**339**	**329**	**668**

Sample and Sampling Technique

The sample of the study was 250 (128 male, 122 female) AEOs, so that both genders were represented sufficiently to the extent that the gendered comparison a core of the study objectives. The distribution of the sample done according to a district-wise allocation plan and as a result, the respondents were acquired in every district of the study environment. This distribution facilitated wider coverage of field conditions and minimized chances of discovering results that would apply to a single district situation. As a sampling technique, the study first, employed a convenience sampling technique for selection of nine districts and then for selection of male and female AEOs, stratified random sampling and proportionate random sampling techniques were used. 250 males and females AEOs of nine districts of the Punjab as per table.

Table 2
District-Wise Male and Female Sample Distribution

Sr. No	Districts	AEOs		
		Male	Female	Total
1	Lahore	9	10	19
2	Kasur	15	15	30
3	Faisalabad	23	20	43
4	Chiniot	15	2	17
5	Gujranwala	12	21	33
6	Hafizabad	9	10	19
7	Sahiwal	15	15	30
8	Pakpattan	11	9	20
9	Sargodha	19	20	39
	Total	**128**	**122**	**250**

Instrument Development and Data Collection

The research involved a structured questionnaire to get the perceptions of Assistant Education Officers (AEOs) regarding quality of Early Childhood Education (ECE) in public schools of Punjab. The tool has been structured based on the four major indicators; (i) physical environment of ECE classrooms, (ii) qualified ECE teachers and caregivers, (iii) support material of ECE and (iv) parent and community engagement. This

indicator-based framework made sure that the measurement would be on the conceptual boundaries of the study and that individual domains of ECE quality could be examined individually and in general (e.g., gender-wise perceptions).

In the case of developing instruments, accepted survey design principles suggest that based on the definition of the construct, to be developed, items are generated, the phrasing makes sense, the validity was determine through experts review and reliability was calculated through Cronbach's Alpha as (.903) of the instrument. The items of the present questionnaire were structured in accordance with the observable quality conditions of ECE that AEOs should be able to assess during monitoring and supervision The questionnaire has two sections. Section A captures demographics of the respondents consisting of district, gender, qualification and administrative experience. In Section B, there are 40 statements which are spread over the four indicators, starting with the physical environment of ECE Classrooms, which is followed by the statements, Qualified ECE Teachers and Caregivers, Support Materials of ECE, and Parent and Community Engagement. The responses were measured on a five-point Likert scale (SA=5, A=4, UD=3, DA=2, SDA=1). This Likert-type scaling is popular in research of perceptions, which allows summative and mean based interpretation of perceptions at item level and construct level (Leon et al., 2020). In the course of data collection, Questionnaire given to AEOs as per the district-wise plan of administration after acquiring the necessary administrative permission. The purpose of the study explained to the respondents and their responses were confidential. The filled questionnaires were also made complete before being inputted into the data sheet to be analyzed.

Data Analysis & Interpretation

Data analysis done by the use of descriptive and inferential statistics. Means and standard deviations of overall and indicator-wise scores (overall and by gender) were used as a part of the descriptive analysis. In testing the hypothesis, independent-samples t-tests were used to statistically compare the means of male and female AEOs on (i) general quality of ECE and (ii) on the four indicators separately. The independent-samples t-test method is typically applied to compare two independent groups and its use is reinforced by ensuring that the assumptions of the independent-samples t-test like approximate normality and homogeneity of variance are met with.

Table 3

Demographic Profile of Respondents (n = 250)

Variable	Category	Frequency	Percentage (%)
Gender	Male	128	51.2
	Female	122	48.8
Qualification	M.A/MSc/BS	200	80.0
	M.Phil/MS	50	20.0
Administrative experience	6–10 years	250	100.0

Table 3 shows that the sample is almost gender-balanced, with 128 (51.2%) males and 122 (48.8%) females. In terms of education, the majority of respondents hold M. A/MSc/BS (80%), while 20% have M. Phil/MS qualification. Regarding experience, all respondents (100%) reported 6–10 years of administrative ECE experience, which indicates that the perceptions reported in this study come from a consistently experienced group of Assistant Education Officers.

Table 4
Descriptive Analysis Across Four ECE Quality Indicator (n = 250)

Indicator	Mean	SD
Physical Environment	4.44	0.18
Qualified Teachers & Caregivers	4.06	0.29
Support Material	4.44	0.18
Parent & Community Engagement	3.13	0.43
Overall ECE Quality	4.11	0.16

Table 4 highlights that the overall quality of ECE is perceived as high (mean score 4.11, standard deviation 0.16), showing a generally positive perception among AEOs. Among the four indicators: Physical Environment received a very high mean score (M=4.44), suggesting that AEOs largely agree that ECE classroom environments are supportive and well-managed. Support Material also scored very high (M=4.44), indicating strong agreement that teaching/learning support resources are available and adequate. Qualified Teachers & Caregivers shows a high mean score (M=4.06), but comparatively lower than physical environment and support material, implying that teacher/caregiver quality is good but still has more room for strengthening. Parent & Community Engagement received the lowest mean score (M=3.13), showing that engagement from parents/community is comparatively weak and is the most critical area needing improvement. The pattern clearly shows strong school-based inputs (environment and materials), while community-based involvement remains the weakest dimension.

Table 5
Gender-Wise Analysis Based on Independent Samples t-Test (n = 250)

Indicators	Gender	Mean	SD	t-value	p-value
Physical Environment	Male	4.49	0.16	4.46	<.001
	Female	4.39	0.18		
Qualified Teachers & Caregivers	Male	4.17	0.28	6.73	<.001
	Female	3.94	0.26		
Support Material	Male	4.45	0.19	1.10	0.274
	Female	4.43	0.16		
Parent & Community Engagement	Male	3.34	0.40	9.64	<.001
	Female	2.90	0.32		
Overall ECE Quality	Male	4.19	0.14	10.40	<.001
	Female	4.02	0.12		

Table 5 compares male and female AEO perceptions across indicators and overall ECE quality. For Physical Environment, male AEOs reported higher perceptions (M=4.49) than female AEOs (M=4.39), and this difference is statistically significant ($t = 4.46$, $p < .001$). For Qualified Teachers & Caregivers, males again rated higher (M=4.17) compared to females (M=3.94), with a significant difference ($t = 6.73$, $p < .001$). For Support Material, the male (M=4.45) and female (M=4.43) mean scores are very close, and the difference is not significant ($t = 1.10$, $p = .274$). This indicates both genders have nearly the same perception about availability of support material. For Parent & Community Engagement, males rated higher (M=3.34) than females (M=2.90), and the difference is highly significant ($t = 9.64$, $p < .001$). For Overall ECE Quality, male AEOs rated significantly higher (M=4.19) than female AEOs (M=4.02) ($t = 10.40$, $p < .001$). Gender-based differences exist in most indicators and overall

perception, except in support material, where both male and female AEOs show similar views.

Table 6
Parent & Community Engagement items by gender (Agree/Strongly Agree %) (n = 250)

Sr. No.	Parent & Community Engagement item	Male AEOs (%)	Female AEOs (%)
34	Monthly parent–teacher meetings participation	100	100
35	Parents' participation in school events	40	25
36	Parents' cooperation with health/nutrition supervisors	93	27
37	School council monitoring children's performance	14	0
38	School council support for ECE enrollment	100	100
39	School council support for family workshops/training	62	38
40	Community financial donations for ECE	0	0

Table 6 provides a clear picture of which specific activities are strong or weak in parent/community engagement as under:

Strong areas (agreement is very high in both genders):

- Monthly parent–teacher meetings: 100% agreement from both male and female AEOs.
- School council support for ECE enrollment: 100% agreement from both genders.

These results suggest that formal structures (meetings and enrollment support) are functioning and widely recognized.

Moderate areas (noticeable gender gap):

- Parents' participation in school events is relatively low, but males (40%) report higher agreement than females (25%).
- School council support for family workshops/training is also moderate, with males (62%) higher than females (38%).

This indicates that family involvement beyond routine meetings is inconsistent, and female AEOs perceive it as weaker.

Weak areas (very low agreement, especially among females):

- Parents' cooperation with health/nutrition supervisors shows a major gap: males (93%) vs females (27%).
- School council monitoring children's performance is extremely low: males (14%) and females (0%).

These findings reflect weak follow-up, monitoring, and shared responsibility at the community level.

Lowest area (no community financial support):
Community financial donations for ECE are 0% for both genders, showing a complete absence of financial contribution from the community for ECE improvement.

Findings
Based on the analysis of the respondents' demographic profile, descriptive results, and gender-wise comparisons, the study reports the following key findings:

1. The rating of the overall quality of ECE by the Assistant Education Officers revealed high ratings, which means that in general ECE arrangements in the observed settings can be considered satisfactory.
2. Among the four indicators, the strongest defined areas were Physical Environment and Support Material, the highest ratings were received. It implies that classroom environment, rudimentary facilities and access to instructional/support resources are generally seen in a positive light.
3. Qualified Teachers & Caregivers had a positive rating as well, however, it was rated lower in comparison to physical environment and support material. This means that the quality of

staffing is rated good but it is an aspect that can be improved.

4. Parent & Community Engagement was the lowest indicator. Community-related involvement was also always reported as less strong as compared to school-based inputs (environment and materials), so there was also a definite gap between institutional readiness and community participation.

5. Any difference in perceptions between the genders was noted on most of the indicators. Male AEOs rated higher Physical Environment, Qualified Teachers and Caregivers, Parent and Community Engagement and overall ECE Quality compared to female AEOs.

6. Support Material no significant difference was found between male and female AEOs, implying that both men and women AEOs have a very similar perception towards the availability and sufficiency of learning/support materials.

7. The results on an item level within Parent and Community Engagement indicate that activities that are formal in nature (e.g., monthly parent-teacher meeting and school council assistance in child enrollment) are high and well recognized, whereas activities that are more in-depth, i.e. monitoring the performance of children, coordination with supervision of health/nutrition-related actions, and community financial support are weak.

8. The financial support/community donation toward ECE was not in place, since it had no consent among the respondents, which implies that the issue of financial contribution by community is a significant gap towards empowering ECE.

Discussion of Results

The general trend of this study is that ECE contributions at school are more dominant than relationship and capacity-based implications. Assistant Education Officers (AEOs) gave positive ratings to overall ECE quality and relatively high ratings to physical environment and support materials and had a relatively moderate rating on teacher/caregiver capacity and parent/community engagement as the weakest. This pattern of inputs-better-than-interactions is typical of systems that have scaled ECE rapidly, where a classroom and materials improve earlier, yet stable teaching practices, supervision, and family partnership require longer to consolidate. Similarly, a process assessment of the ECE scale-up in Punjab also focuses on the need to enhance accountability, professional growth and utilisation of data on process quality to maintain the gains made after the initial investments (Ansari et al., 2023).

The physical environment score is high, which means that most of the ECE settings are seen as child-friendly, well-organized, and encouraging early learning. This result is valuable since it is becoming apparent that physical and sensory classroom variables (including the arrangement of space, environmental quality, and access to suitable learning zones) are significantly connected with social-emotional competence of children and their general early learning experiences (Tamblyn et al., 2023). Play based routines become easier to execute on the part of the teachers when the classroom environment is safe and structured and children are more likely to demonstrate heightened engagement. Thus, the high physical-environment perception in the current research may be understood as a good sign that the prerequisites to learning are being established in most schools.

On the same note, the AEOs rated the support materials very highly, which also means that schools are viewed to possess learning aids and activity resources to facilitate ECE delivery. But according to international and field-based evidence, materials enhance learning best when they are available and actively involved by means of interactivity, guided play and orchestrated activities- not merely stored or presented. In case, as an illustration, it has been demonstrated that in early childhood environments, children have less access to teaching and learning resources, which means they have fewer opportunities to interact and weaken learning in the classroom (Frimpong, 2025). Practically, it can be seen that the ECE system in Punjab can be on the right track towards provision, but the second task is the further instructional application of resources. This is also

consistent with the bigger demands to have monitoring systems which are not only tracking enrollment or inputs, but the quality of what occurs in the classroom (Raikes et al., 2023).

The indicator of qualified teachers/caregivers was rated in the positive but worse than the environment and materials which is a significant indicator of improvement planning. It has been established that workforce development is a high leverage avenue of enhancing the quality of ECE. According to a large systematic review and meta-analysis, professional development among educators working with early childhood learners is linked to positive child outcomes, particularly when the focus of development activities is to be developed along with the learning objectives, and coaching aspects are incorporated (Brunsek, 2021). There is also experimental evidence to suggest that the quality of teaching and the development outcomes of child development can be enhanced by structured professional development on a large scale (Siraj et al., 2023). Qualitative data related to the Pakistani context of the public sector shows that in Punjab, a lack of teacher training and implementation delays may limit the quality of ECCE, despite the formal emphasis on the priority of ECE (Pirzada, 2025). Collectively, the current results support the premise that a teacher/caregiver strengthening is required to transform consistently high-quality classroom practice by using good inputs.

The lowest strength of parent and community engagement is the most significant policy and practice finding since it is a support system that is lacking around the child. At the item level, there are only formal structures (meetings and enrollment support), which might exist, but profound involvement (monitoring learning, health/nutrition coordination, community contribution, and sustained participation) is insufficient. This is consistent with the evidence presented by Pakistan residents that proves that parent-teacher relationships and awareness are essential, but are usually poorly developed by socioeconomic and limited school family contacts (Virani & Ali, 2022; Pirzada, 2025). Meanwhile, there is evidence from around the world that parenting and caregiver-based interventions enhance the parenting practices and outcomes of early child development, which are especially strong in low- and middle-income environments (Jeong et al., 2021). The totality of this evidence indicates that the system of ECE in Punjab can be improved to go beyond event-based involvement and to structured, practical involvement, e.g. brief parent guidance about home learning, uncomplicated progress-sharing routines, and community awareness activities connected to specific roles and follow up.

The gender-based comparison revealed that male AEOs always recorded higher perceptions compared to the female ones in most of the indicators (except support materials). Instead of merely considering this as a difference, this should be interpreted as an issue of supervision and measurability: varying field experiences, standards of observation, or exposure to schools can affect the quality judgment. The main implication of the system improvement is that to improve it should have standardized monitoring rubrics and shared observation criteria, because in this way quality will be measured in the same way with officers and across various districts. This is consistent with the international suggestions that nations enhance regular monitoring frameworks and create practical tools to specify and track ECCE quality and with the evidence specific to Punjab that highlights the enhancement of information systems and feedback patterns on quality of processes (Ansari et al., 2023).

Conclusions and Recommendations

This paper evaluated the quality of Early Childhood Education (ECE) in the public schools based on the views of the Assistant Education Officers. In general, the findings reveal that the quality of ECE is considered to be positive, especially in relation to the following domains: the physical learning environment and access to supporting materials. This implies that there is significant improvement in creating child friendly classes and basic resources required to support the activity-built learning in many schools. The significance of such strengths is that a safe,

organised and well-resourced classroom establishes the background on which children are able to participate, be motivated and have early learning preparedness.

Meanwhile, the research notes two spheres that could have greater emphasis to be made to achieve future growth. The first indicator to note in terms of its relatively lower rates was the indicator involving qualified teachers and caregivers though it was rated as generally good. This is an indication of the practical fact that effective ECE does not solely depend on the resources as long as teachers and caregivers are not systematically developed via training, mentoring and role expectations. Secondly, and the most importantly, parent and community engagement became the weakest point. Although there might be routine structures like meetings and enrollment support, more intensive involvement like active monitoring of school council and coordination of health/nutrition support of children and community input does not seem to be much. This gap is important as the combination of school work with the home support, the sense of community ownership, and frequent communication between school and family results in the best outcomes of ECE.

The gender-specific analysis indicates that male and female AEOs had different perceptions on a number of indicators, and more standardised monitorship practices and common principles have to be used when supervising the field. To summarize, the ECE provision seems to be more robust in terms of school-based inputs, however, improving the further development requires focusing on the reinforcement of people and partnerships, in particular, the aspects of teacher capacity and effective involvement of families and community.

The recommendations have given below:

1. Strengthen parent engagement beyond meetings by introducing simple monthly home-support plans (reading, counting, play routines) and short parent orientation sessions for ECE.
2. Activate School Councils for ECE monitoring with clear responsibilities (attendance follow-up, learning environment checks, child progress discussions) and a simple monitoring checklist.
3. Improve teacher/caregiver capacity through regular refresher training, mentoring visits, and practical demonstrations of activity-based learning and classroom management.
4. Standardize AEO supervision tools (common rubrics, observation forms, and scoring guides) to reduce variation and improve consistency across districts and officers.
5. Link ECE with child health and nutrition coordination by improving collaboration between schools and relevant supervisors/health staff, including scheduled follow-up visits.
6. Ensure effective use of support materials by guiding teachers on lesson integration (how to use available resources daily), not only confirming material presence.

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