Life Skills for Sustainability in Early Childhood Education: A Qualitative Content Analysis of ECCE Scheme of Work by FGEIs and National Curriculum of Pakistan

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ABSTRACT: Life skills are increasingly treated as the practical link between early childhood education and education for sustainable development, yet their integration into the curriculum of Pakistan remains under-researched. This qualitative study analyses how life skills and sustainability-related learning are represented in the Federal Government Educational Institutions (Cantts/Garrisons) Scheme of Work for Class ECCE (Pre–1), Session 2026–2027, a document that operationalises the National Curriculum of Pakistan 2022–23. A deductive qualitative content analysis was conducted, using the ten core life skills defined by the World Health Organization as primary categories and adding sustainability-linked indicators and pedagogical-support categories. Curriculum entries were examined at manifest and latent levels and coded as explicit, implicit or not evident. The analysis found strong integration of effective communication, interpersonal relationships, self-awareness, creative thinking, decision making and problem solving. Critical thinking and empathy were explicit in places and implicit in observation, comparison, collaboration, respect and care-oriented activities. Coping with emotions was weakly developed and coping with stress was limited. Sustainability content was well represented in environmental awareness, health and hygiene, and social responsibility, but weaker in resource conservation, which remained at the level of awareness of natural and man-made resources rather than repeated practice such as saving water, reducing waste and reusing materials. The scheme was pedagogically supportive of play and activity-based, collaborative, experiential and teacher-guided learning. The curriculum therefore offers a solid basis for life skills-based sustainability education but needs greater explicitness in emotional coping, stress management, resource conservation, safety and structured sustainability routines.

KEYWORDS: Early Childhood Education, Life Skills, Sustainability Education, Qualitative Content Analysis, Curriculum Integration, ECCE, Pakistan

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Introduction

It is now recognized that early childhood education is not only a foundation for school readiness, but also a time when values, behaviours, relationships and capacities are formed that will influence subsequent engagement with society. In early years, children learn to communicate, cooperate, express and regulate themselves, be curious, make decisions and solve problems in basic ways. These capacities are relevant to sustainable development, as sustainability is not only about knowledge, but also about the way people relate to others, use resources, respond to problems and participate responsibly in communities. Early childhood is highlighted in the global development agenda, in the Sustainable Development Goal 4, Target 4.2 (Access to quality early childhood development, care and pre-primary education) and Target 4.7 (Knowledge and skills for sustainable development) (United Nations, 2015).

Education for Sustainable Development (ESD) goes beyond merely imparting environmental information. It's about the knowledge, values, skills, attitudes and behaviours that help learners to make informed and responsible decisions for environmental integrity, social justice and long-term wellbeing (UNESCO, 2020). These goals must be translated at the early childhood level into developmentally significant experiences. Young children are more likely to experience sustainability in their everyday activities, such as sharing, taking care of plants, keeping learning environments clean, supporting each other, reducing waste, adopting healthy habits, making simple choices, and cooperating. They are engaged in discussions about climate change and sustainable consumption. This makes the curriculum a significant place to explore how sustainability is adapted to early childhood learning.

Life skills offer a very convenient conceptual pathway for this translation. The World Health Organization (WHO, 1994) has listed ten essential life skills: decision-making, problem-solving, creative thinking, critical thinking, effective communication, interpersonal relationship skills, self-awareness, empathy, coping with emotions and coping with stress. These skills were initially presented as psychosocial skills for effective coping with everyday demands and challenges, but they are also applicable to sustainable living. Decision-making can help children make responsible choices; problem-solving and critical thinking can help them interpret what is happening around them; communication and interpersonal skills can help them cooperate; empathy can help them extend their concern to others and living things; and self-awareness and emotional coping can help them participate responsibly. Transferable cognitive, social, and personal skills are also key to empowerment and participation throughout the life course, as part of UNICEF's broader life-skills framework (UNICEF, 2019).

The connection between life skills and sustainability is particularly relevant in early childhood as many dispositions related to sustainability are behavioural and relational. A child may learn the concept that plants need care, but the value is enhanced if the child is provided practice to water a plant, watch it grow and learn that living things need care. Children can be instructed not to waste natural and man-made resources, but if they are regularly reusing paper or sharing classroom resources, they will see responsibility in action. Similarly, social sustainability is felt when children take turns, listen to each other, include others, are courteous and work cooperatively. Early childhood education for sustainability research has thus focused on participation, practical engagement, and children's agency, as opposed to passive knowledge transfer (Ardoin & Bowers, 2020; Borg & Pramling Samuelsson, 2022).

This process is linked to curriculum integration. Early childhood level life skills are not likely to be effective if they are presented as general values or as stand-alone moral messages. They need to be aligned between learning outcomes, activities, teacher guidance, routines and assessment. Developmentally appropriate practice also focuses on play, exploration, inquiry, interaction, and strengths-based learning, rather than formal, lecture-style teaching (National Association for the Education of Young Children [NAEYC], 2020). Therefore, a curriculum that aims to build life skills for sustainability should not just identify desired skills but also show pedagogical pathways for children to enact them.

This question is of utmost importance in the Pakistani context. The focus of the national curriculum has been increasingly on whole child development, child-friendly learning, activity-based pedagogy and life skills. Integrated early learning is based on the policy of the Single National Curriculum for Early Childhood Care and Education and the later National Curriculum of Pakistan for Early Childhood Education (Ministry of Federal Education and Professional Training, 2020; National Curriculum Council Secretariat, 2023). Meanwhile, studies on early childhood provision in Pakistan indicate that the quality of the curriculum is intertwined with teacher preparation, classroom settings, teaching materials, monitoring, and institutional support (Samuel Hall & UNICEF Pakistan, 2023). Thus, a policy or curriculum statement alone does not necessarily make it clear how life skills are manifested in practical implementation, which will make it meaningful for achievement of objectives.

There is a gap in literature that was recognized from the doctoral thesis source, both in context and concept. Although there is increasing international research on early childhood education for sustainability, much of this research focuses on environmental education, nature-based learning, outdoor play, social-emotional learning, or pro-ecological attitudes. Less focus has been placed on life skills as a holistic pathway to cognitive, social, emotional, behavioural and sustainability outcomes in early childhood. This is more visible in Pakistan, where evidence of the curricular operationalization of life skills at the ECCE level is still limited. The thesis particularly highlights that there is an imbalance in the context and focus of existing research and that early childhood contexts in Pakistan have been under-researched as compared to the West, Europe, Australia, Turkey and Scandinavian countries.

This paper thus separates out and elaborates the qualitative curriculum strand of the broader doctoral research. It does not include any documentary findings from the survey component, but only the chosen Federal Government Educational Institutions (Cantts/Garrisons) Scheme of Work for Class ECCE (Pre–1), Session 2026–2027. This more limited focus enables a more coherent analysis of what the curriculum document itself enables, emphasizes and omits.

The study aims to answer the following three research questions: (1) How are the ten WHO core life skills reflected in the selected ECCE scheme of work? (2) How are sustainability-linked indicators (environmental responsibility, resource conservation, health and hygiene, social responsibility) incorporated in the document? and (3) What pedagogical support does the scheme offer for translating life skills into developmentally appropriate classroom practice? The paper addresses these questions and offers a curriculum-level perspective on the relations between life skills and sustainability in ECCE context in Pakistan and points to potential future curriculum development that could enhance these connections.

Literature Review and Conceptual Orientation

Life Skills in Early Childhood Education

Life skills are generally defined as the skills people need to manage the demands, relationships, decisions and challenges that they face in daily life. The WHO framework is important in this connection as it incorporates cognitive, interpersonal, self-related capacities and emotional coping into one framework (World Health Organization, 1994). The framework can be used with all age groups but needs to be interpreted keeping in view early childhood level. Preschool children may not demonstrate decision-making or critical thinking at the same level as adolescents; these skills may manifest in selecting materials, expressing preferences, arranging events, comparing objects, solving simple problems, asking questions, and thinking about consequences of classroom behaviors.

The early years are a critical time as development in cognitive, emotional, social and behavioural domains is fast and interdependent. Studies on early childhood development reveal that nurturing environments, responsive

relationships, protection, stimulation and opportunities for learning have long-term impacts on human capability (Black et al., 2017; World Health Organization, UNICEF, & World Bank Group, 2018). This developmental view also endorses the integration of life skills in ECE, as communication, self-awareness, empathy, cooperation, problem-solving and emotional regulation are not secondary to learning, but rather are fundamental aspects of the developmental process through which children engage in learning and social life.

Life skills education is also closely related to social-emotional learning. Communication, empathy, relationship skills, emotional awareness and self-regulation overlap with broadly used social-emotional competence frameworks. But the concept of life skills is wider, as it also encompasses decision-making, problem-solving, creative thinking and critical thinking. Nasheeda et al. (2019) state that life Skills education at early childhood level should be developmentally appropriate, activity-based, and child-centered instead of being lecture- and memorization-oriented, as these are not effective ways of teaching life skills to young children. In conclusion, they assert that life skills education has the potential to foster positive development, but only if it is contextually relevant and well-constructed. Hvalby et al. (2024) also point out that life skills are gaining more relevance in education and need to be better conceived and more effectively evidenced. These are particularly pertinent in early childhood where skills are often integrated into play and routine even without naming them as explicit skills.

Early Childhood Education for Sustainability

Education for Sustainable Development (ESD) has become a key educational imperative in response to climate change, environmental degradation, social injustice, consumption irresponsibility, poverty, and declining civic responsibility in the rapidly developing world. UNESCO (2020) explains that ESD empowers learners with the knowledge, skills, values, and attitudes needed to take informed decisions and responsible actions for environmental integrity, economic viability, and a just society. The concept of education for sustainability in early childhood has grown from being limited to an environmental perspective to a more multidimensional understanding of sustainability that incorporates environmental, social, ethical and cultural aspects. The systematic review evidence shows that studies on sustainability in early childhood have tended to focus on the environmental dimension, with the social and economic dimensions being less consistently studied (Güler Yıldız et al., 2021). This imbalance is significant because sustainable development is not just about ecological protection; it is about cooperation, fairness, participation, care, health and community wellbeing.

Young children need to connect sustainability to experience. Ardoin and Bowers (2020) determined that early childhood environmental education can help foster environmental learning, social-emotional development, affective development, and nature connection. Borg and Gericke (2021) also point to the need for social sustainability in preschool, and Borg and Pramling Samuelsson (2022) emphasize children's agency and participation in sustainability learning. These views indicate that an ECCE curriculum should provide opportunities for children to act, to choose, to observe, to cooperate, to care and to reflect, instead of just learning words that are related to sustainability.

Competence is another key concept of ESD. Rieckmann (2018) positions sustainability education in terms of competencies that help learners to comprehend complex issues and engage in transformation. These competencies need to be broken down and integrated into the daily activities at the early childhood level. Decision-making can include selecting healthy foods or determining how to share resources; critical thinking can include identifying living and non-living items, empathy can include caring for a classmate as well as other living things like animals and plants, and social responsibility can include maintaining a shared space. Life skills thus offer a language of development for early childhood curriculum that is practical and allows integration of broad sustainability goals.

Curriculum Integration as the Bridge Between Policy and Practice

One of the primary ways in which educational priorities can be turned into teachable experiences is through curriculum. Integration of life skills and sustainability is more than just the inclusion of individual words like "environment", "responsibility" or "communication". A meaningful curriculum is one that links the competencies that are intended to be learned with the learning outcomes, child-centered activities, teacher guidance, resources, classroom routines, and observations or assessments. UNESCO's ESD roadmap and guidance on greening the curriculum emphasize the importance of integrating sustainability into the curriculum content, pedagogy, and assessment, instead of limiting it to specific topics (UNESCO, 2020, 2024).

This is especially vital in ECCE as children learn through participation and repetition. NAEYC's developmentally appropriate practice framework focuses on play-based and strengths-based experiences, exploration and inquiry, relationships, and active engagement (NAEYC, 2020). A curriculum that encourages co-operation but does not allow for any co-operative activity, or that refers to environmental responsibility but does not offer any opportunities to take care of living things or to use resources carefully, may have limited behavioural influence. On the other hand, a curriculum can have a strong impact on life skills even if they are not specifically mentioned, but embedded in routine activities, for example, by using role play, storytelling, group activities, individual creative activities and teacher modelling.

The difference between explicit and implicit integration is thus analytically useful. Explicit integration refers to when a skill or outcome is directly mentioned in a curriculum, such as problem-solving, verbal communication or self-confidence. Implicit integration is when the skill is integrated into an activity, value or routine without being explicitly mentioned. This implicit mode is often used in early childhood curricula which are based on integrated experiences and not on lists of competencies in subjects. Both manifest text and latent educational meaning should therefore be the subject of a rigorous curriculum analysis.

Pakistan's ECCE Curriculum Context

Although ECE in Pakistan has gone through a journey from traditional KATCHI class to formal Early Childhood Education, the National Plan of Action (NPA) 2001-2015 decided that there should be a specific curriculum, classroom, teacher, and audio-visual aids for ECE. NPA remained successful in introducing the first National Curriculum for ECE in 2002, which was later revised in 2007. But its implementation faced many challenges due to not being provided basic facilities as pledged (Khan, 2018). ECE has been gaining attention in the policy and curriculum in Pakistan, driven by the country's development needs and international commitments to SDG 4.2. Awareness of the importance of comprehensive ECE in Pakistan's national policy guidance was gradually increasing to cope with the national challenges as well as to fulfill the commitment to international institutions. The Single National Curriculum: Early Childhood Care and Education and the National Curriculum of Pakistan for Early Childhood Education highlight integrated learning, child-friendly pedagogy, and synergy between outcomes, classroom practices, and assessment (Ministry of Federal Education and Professional Training, 2020; National Curriculum Council Secretariat, 2023). These changes open opportunities for life skills and sustainability themes, while the operational detail for teachers is important.

In this regard, the Federal Government Educational Institutions (Cantts/Garrisons) Scheme of Work for Class ECCE (Pre–1), Session 2026–2027 is relevant as it breaks down the general curricular expectations into weekly topics, activities, values and teacher directions. The scheme covers English and Urdu language and literacy, basic mathematical concepts, World Around Us, Nazra and Islamiyat, creative arts, Personal, Social and Emotional

Development (PSED) and Physical Development, Health, Hygiene and Safety. It also indicates that the key learning areas are interconnected and that teachers should plan activities that will instill twenty-first-century skills (Federal Government Educational Institutions [FGEIs], 2026).

Life skills are especially relevant to the scheme as it is play and learning by doing. But the activity-based language does not necessarily mean that all major life skills are equally addressed or that sustainability is addressed as action, awareness or both. This paper therefore adopts a structured qualitative approach to the analysis of the depth and pattern of that integration.

Research Methodology

Research Design

The qualitative content analysis method is employed in this paper to analyse the representation of life skills and sustainability in a curriculum implementation document. The qualitative part of the original doctoral study was specifically geared towards analysing the curriculum, and the larger study included a separate quantitative teacher survey. Only the documentary qualitative strand is reported in this article. This separation prevents methodological mixing and allows the curriculum evidence to be interpreted as it is. Qualitative content analysis was suitable since the aim was to explore and discover the skills that were explicitly mentioned as well as the patterns, meanings and educational intentions that could be found in the activities and teacher guidance. The analysis was based on the difference between the manifest content (what is seen and explicitly said) and latent content (what is done, what is repeated, what is valued, what is expected in relation to pedagogy) (Graneheim et al., 2017; Lindgren et al., 2020).

Document Selected for Analysis

The document analyzed was the Federal Government Educational Institutions (Cantts/Garrisons) Scheme of Work, Warm and Cold Stations, Session 2026–2027 (FGEIs, 2026) for Class ECCE (Pre–1). It was chosen to be immediately applicable to the ECCE level and offer detailed curriculum planning for young learners. It is basically further breakdown into weekly topics, activities and plan of national curriculum of Pakistan for ECE. It sets the age of early childhood as being around 3-5 years, and that children learn through play, learning by doing, direct experience and active participation. It also included integrated learning areas, topics for each week, activities and resources, teacher directions, and a column that listed "Life Skills / Moral Values to Develop." The document was not considered to be representative of all the public, provincial, private, and community-based ECCE curricula in Pakistan. It was explored as a specific federal scheme of work in the FGEI context. This is significant as curriculum structures and implementation documents differ between systems.

Unit of Analysis

The units of analysis were the curriculum elements in which intended learning and classroom practice were manifested. These were the key learning areas, weekly topics/units, stated activities, online / supplementary resources, entries in the column "Life Skills / Moral Values to Develop", and teacher instructions. All entries were analysed for explicit references to life skills, and for activities that could be reasonably considered to be developing life skills.

The approach is illustrated with examples. "My Self" was explored for self-awareness and decision-making as children were asked to identify personal information, likes and dislikes. Greeting" and "Courtesy Words" were analyzed in terms of communication and interpersonal skills. Story sequencing, matching, sorting and mathematical tasks were considered regarding problem-solving and critical thinking. Sustainability-related competencies were explored in topics including hand washing, healthy and junk food, living and non-living things, plant life cycle, natural and man-made resources and responsible citizenship.

Coding Framework

The coding framework had three layers and was deductive. The first level was the ten WHO core life skills: decision making, problem solving, creative thinking, critical thinking, effective communication, interpersonal relationship skills, self-awareness, empathy, coping with emotions, and coping with stress (WHO, 1994). The second layer included sustainability-related indicators, such as environmental responsibility, resource conservation, health/hygiene, social responsibility/citizenship, cooperation/participation, and care/community wellbeing. These indicators were used to explore the application of life skills to the themes of environment, social, health, resources and citizenship. The third layer focused on pedagogical support based on the curriculum, such as play-based learning, role play, storytelling, discussion, group work, observation, creative activity, outdoor learning, experiential learning, and teacher guidance.

Three interpretive statuses were used for each category. Explicit " was used when the skill or indicator is explicitly named in the curriculum text. “Implicit” was used when the term was not used but the activity or value was clearly indicative of the competency. “Not evident” was applied when a meaningful reference, activity, value or learning outcome was not identified. In some findings, the analysis also distinguished between categories as strong, limited, or weakly implicit based on the pattern of evidence.

Analytical Procedure

The document has been read in a systematic way through its learning areas and weekly planning. The segments were matched to the pre-established categories, and the location and nature of evidence were noted. The coding was not frequency-based; it was interpretive, to find out how a skill was represented and what curricular support was evident, not how many times a word was used. The directly named competencies were separated from the pedagogical opportunities that were not explicitly stated, to avoid overstating the formal status of skills that were only implicit in the competencies. The final analysis was structured around three result domains, namely WHO core life skills, sustainability-related indicators, and pedagogical support, which are related to the research questions. Summary tables were then created to illustrate the evidence base, coding results, and interpretation for each category. This curriculum analysis was not reported in the original thesis, nor was there a formal independent second-coder procedure or intercoder coefficient. Therefore, the results should be interpreted as a structured deductive analysis of a single curriculum document and not as a reliability-tested, multi-coder analysis.

Findings

The content analysis identified a curriculum that was generally life skills and sustainability supportive, but with varying degrees of explicitness and depth of representation of the various life skills competencies. Three overall trends were identified. First, cognitive and social-interpersonal life skills were more well developed than emotional coping skills. Second, sustainability was evident in the areas of environmental awareness, health, hygiene, citizenship and social responsibility, whereas direct resource-conservation routines were relatively underdeveloped. Third, the scheme offered good pedagogical support, including play, activity, collaboration, observation and teacher guidance, but less explicit guidance on emotional coping, stress management and structured sustainability routines.

Representation of WHO Core Life Skills

There was explicit and implicit representation of decision-making. Decision-making was directly mentioned as an outcome of personal and social development that children wanted to achieve in the PSED component. The skill was also integrated into activities where children were asked to identify likes/dislikes, to express preferences and make

personal choices. The selection, description and representation of preferred objects or experiences was afforded through activities like "My Self" and "My Toy". At ECCE level, these are developmentally appropriate ways of making choices and not complex decision analysis.

Problem solving was also explicit in PSED and implicit throughout language and maths activities. Children were asked to sequence pictorial activities, sequence stories, match and sort, complete tasks, do simple sums and find out which numbers come before or between numbers. These activities involved ordering, comparing, completing and logical ordering. The pattern suggests that problem-solving was not limited to a specified competency but was spread throughout the regular learning activities.

Drawing, creative writing, character sketching, card making, role play and expressive activities were all well integrated and used to promote creative thinking. The scheme's overall attitude of "play and learning by doing" offered an enabling attitude towards creativity. "My School", "My Self", "My Mother", "My Toy", "My Friend" and the summer-related creative writing activities prompted children to express experience through language and visual expression. For some entries, creative thinking was explicitly mentioned in the life skills/moral values section; for others, it was implicit in the open-endedness of the task.

Critical thinking was observed, but it was not frequently mentioned. The most explicit references were in creative writing tasks in which creative and critical thinking were linked. In most cases, critical thinking was manifested in observation, comparison, classification and discussion. Children were asked to make observations of similarities and differences, to sort examples, and answer teacher's questions on topics including seasons, weather, hot and cold, living and non-living things, healthy and junk food, natural and man-made resources, plant life cycle, responsible citizenship, and sound-producing objects. The scheme therefore facilitated early reasoning but does not always specify critical thinking as an outcome.

One of the best life skills in the document was effective communication. Language and literacy activities explicitly mentioned verbal communication, listening, speaking, self-confidence, greeting and courtesy. Describe yourself, family, school, country, festivals, toys, etc. was repeated many times. The communicative dimension was further enhanced through storytelling, sentence repetition, classroom discussion and sharing ideas. Communication thus became a formal skill and a frequent way of engaging in classroom life.

Skills relating to interpersonal relationships were also highly featured. PSED made clear the importance of sharing and working cooperatively with peers, teachers, family members and neighbours, and acceptance of differences, including differences in gender, ability, culture, language and ethnicity. Practical opportunities for interaction were provided through group tasks, role play, greetings, festival activities, family themes, visits to school and classroom discussion. The curriculum thus connected relationships with cooperation and respect for diversity and social participation.

There was clear integration of self-awareness through references to likes, dislikes, emotions, self-grooming, identity and self-confidence. The topics "My Self", "My Family", "My Home", "My School" and body parts focused children's attention on their identity, relationships, preferences and physical self. This pattern was reinforced by activities that involved children speaking and writing about themselves and using their own pictures. Thus, self-awareness was explicitly mentioned and integrated in personal-expression tasks.

Empathy was mostly at the implicit level. There was no consistent use of the term "empathy", but values and activities associated with concern, kindness, respect, care, acceptance and helping were found. Children were encouraged to respect diversity, work cooperatively, use polite language, appreciate the importance of family and community, care for plants and animals and behave appropriately with others. The analysis thus assumed that empathy is a substantive topic that is underdeveloped as a term. This distinction is important as an implicit moral

orientation may afford opportunities for empathy but may not provide teachers with an explicit developmental outcome to plan for or evaluate.

Dealing with emotions was relatively poor. The PSED area recognised children's emotions; however, there was no detail or structured activities for recognizing anger, managing sadness, expressing fear, calming down and resolving emotional conflict. Indirect support may be implied through role play, self-confidence exercises, classroom interaction and teacher's responsibility to develop supportive learning environments. However, the representation of emotional awareness was greater than emotional coping. The scheme acknowledged that children have feelings but did not provide much information on what children should learn to do with challenging emotions.

The least developed of ten life skills was coping with stress. Stress, anxiety, fear, frustration and coping strategies were not mentioned directly in the document. Orientation, play, routines, self-confidence building, school visits, and supportive teacher practices may play an indirect role in adjustment and decrease distress but were not conceptualized as stress-management experiences. Therefore, coping with stress was coded as not explicit and weakly implicit.

This unequal distribution is summarized in Table 1. There was a strong representation of six life skills: communication, interpersonal relationships, self-awareness, creative thinking, decision-making and problem-solving. Critical thinking was there, but not as explicit. Empathy was socially situated, but not strongly directly named. Emotions were only coped with to a limited extent, and coping with stress was the most evident curricular gap.

Table 1

Summary of WHO Core Life Skills in the FGEI ECCE Scheme of Work

WHO core life skill	Coding result	Evidence and interpretation
Decision-making	Explicit + implicit	Formally included in PSED; likes/dislikes and preference activities support simple choice-making.
Problem-solving	Explicit + implicit	Named in PSED and embedded in sequencing, matching, sorting, and mathematics tasks.
Creative thinking	Explicit + implicit	Strongly reflected in drawing, creative writing, card-making, role play, and expressive activities.
Critical thinking	Explicit + implicit	Present through selected direct references and frequent observation, classification, comparison, and discussion.
Effective communication	Explicit + implicit	Strong integration through greetings, courtesy words, listening/speaking, storytelling, and sharing ideas.
Interpersonal relationships	Explicit + implicit	Strongly reflected in sharing, collaboration, group participation, and respect for diversity.
Self-awareness	Explicit + implicit	Identity, likes/dislikes, emotions, self-grooming, body awareness, and self-confidence are clearly represented.
Empathy	Implicit	Present through kindness, respect, collaboration, diversity, and care for people, plants, animals, and environment.
Coping with emotions	Implicit + limited	Emotional awareness is present, but structured strategies for managing difficult emotions are limited.
Coping with stress	Not explicit; weakly implicit	Least developed skill; orientation and supportive routines may aid adjustment, but stress-coping content is largely absent.

Sustainability-linked Life Skills

The scheme has a meaningful integration of environmental responsibility. Seasons, weather, hot and cold, living and non-living things, habitats, plant life cycle, transport and natural and man-made resources introduced children to aspects of the natural and physical world. These themes facilitated observation, comparison and classification and the theme "Responsible Citizen" connected environmental awareness with responsible behaviour. The curriculum thus did more than just offer environmental objects as content; it also linked awareness of environment to citizenship and communication.

The most significant environmental learning was in the World Around Us learning area where children were introduced to living things and habitats, landforms, weather and resources. Activities asked teachers to utilize real-life examples and to encourage children to gather natural and man-made items like leaves, flowers, pencils, etc. for a learning corner. This sort of activity made the environment an object to be explored firsthand, not just by reading about it in a book.

Resource conservation, however, was not well developed. Children were introduced to natural and man-made resources, and activities involved children collecting, comparing and classifying examples. These experiences provide a conceptual basis for resources and their uses. However, there was less evidence of the repetition of behaviour around water, switching off unnecessary electricity, reducing waste, reusing materials or avoiding unnecessary consumption. It is important to differentiate between resource awareness and resource conservation; therefore, the curriculum supported children to be aware of resources but provided less support for practicing resource conservation.

Health and hygiene were very well integrated. Physical Development, Health, Hygiene and Safety was a formal learning area, and hand washing was assessed content. Practical activities were hand washing videos and demonstrations, Hand Washing Day, personal cleanliness, healthy junk food, fruit and salad days, healthy lunch and drinking water. These experiences were related to health knowledge with routine and choices. They also associated wellbeing related to sustainability with self-awareness and decision making. Safety was formally there but, in terms of being elaborated through specific recurring activities, it was less than hygiene and healthy eating.

The other area of strength was social responsibility and citizenship. Topics covered were greetings, courtesy words, family, school, country, festivals, professions, responsible citizenship, sharing, collaboration, respect and appreciation of diversity. The social sustainability dimension was reinforced by PSED expectations that children share, collaborate and accept differences. In this way, the scheme did not reduce sustainability to nature and resources. It also inculcated a sense of community, good manners, co-operation and respect.

This is significant as much of the literature on sustainability in early childhood points to a greater focus on environmental sustainability than social sustainability (Güler Yıldız et al., 2021). Environmental themes were present in the scheme analysed, but social responsibility was also integrated in several learning areas and in everyday social practices. Despite this, there are still opportunities to further develop fairness, inclusion, conflict resolution, classroom responsibility and helping behaviour as more explicit sustainability-related outcomes.

Overall, the sustainability analysis showed three different levels of curricular maturity. Environmental awareness and social responsibility were integrated meaningfully; health and hygiene were strong and action-oriented, and resource conservation was more conceptual than behavioural. The curriculum thus offered a wide foundation of sustainability, but not all sustainability themes were translated into regular practices of responsible action.

Table 2

Sustainability-Linked Indicators in the FGEI ECCE Scheme of Work

Indicator	Coding result	Evidence and interpretation
Environmental responsibility	Explicit + implicit	Weather, living things, habitats, plant life cycle, resources, and responsible citizenship connect observation with environmental awareness.
Resource conservation	Implicit + limited	Natural/man-made resources are introduced, but repeated practices for saving water/electricity, reducing waste, and reuse are weak.
Health, hygiene, and safety	Strong for health/hygiene; limited for safety	Hand washing, cleanliness, healthy food, healthy lunch, and drinking water are practical and repeated; safety is less elaborated.
Social responsibility and citizenship	Explicit + implicit	Greetings, courtesy, sharing, collaboration, respect for diversity, family/community themes, and responsible citizenship are clearly present.

Pedagogical Support for Life Skills Integration

One of the best aspects of the scheme was its pedagogical approach. The document made it very clear that children learn best through play, learning by doing, experience and active participation, and that a play- and activity-based approach is needed that is responsive to children's needs, interests, abilities and social context. This orientation is very suitable for life skills education as skills like communication, cooperation, self-confidence, decision making and problem solving are developed through participation and not by simply receiving.

Play-based and activity-based learning was found throughout the scheme in the form of songs, drawing and tracing, role play, flashcards, pattern making, colour activities, healthy-food events, plantation activities, Earth Day craft, show and tell and other hands-on activities. These activities enabled children to observe, express, create, choose, respond and interact. Significantly, life skills were not only found in PSED, but were spread throughout language, mathematics, environmental learning, arts and classroom routines.

There was also a high level of storytelling, role play and discussion. Role play was specifically suggested as a method for teaching greetings, connecting it with verbal communication, self-confidence, listening and speaking. Story-based activities were used to teach moral values such as the value of animals, and teacher-directed picture discussion and questioning were found in learning areas. These methods facilitated communication, empathy, moral awareness and awareness of the environment.

Explicit support for interpersonal skills was given through group work and collaborative learning. Children were expected to share and collaborate with peers and adults, and there were group pattern-making and other shared activities in the curriculum. Group games, discussion, planting, Earth Day craft, and a collective end-of-term lunch were other activities that provided opportunities for social participation. Thus, collaboration was not only a learning process, but it was also a desired social outcome.

Outdoor, observation-based and experiential learning were meaningfully integrated although the term "experiential learning" was not used consistently. The "My School" activity involved a school visit, which included exploration, observation, personal expression and drawing. Weather, seasons, living and non-living things, resources, plant life cycle, transport, food and sound-producing objects involved children in real-life examples. Direct handling

and classification were also evident in the learning corner of collected natural and man-made objects. These elements are especially relevant for sustainability as they are related to knowledge and surroundings.

Teacher guidance was clear and significant. The teachers were seen as pedagogical leaders, and they should provide an environment where children are encouraged to do the right things and behave appropriately in groups and individually. They were allowed to choose from demonstrations, books, rhymes, videos, discussion and reinforcement tasks to create activities based on student learning objectives and twenty-first-century skills. The teacher was thus placed in the role of planner, facilitator, model and interpreter of the integrated curriculum.

However, there were some areas that were not addressed in the pedagogical foundation. The scheme gave a much less direct focus on emotional coping and stress management than on communication or collaboration. Similarly, there was more sustainability pedagogy for awareness, health routines and selected environmental activities than for systematic resource-conservation routines. The curriculum may then be more coherent in that it could be better linked to the strong child-centred pedagogy and clearer progression in competency in these weaker aspects of the curriculum.

Table 3

Curriculum-Based Pedagogical Support for Life Skills

Pedagogical support	Coding result	Evidence and interpretation
Play- and activity-based learning	Explicit + strong	The scheme emphasizes play and learning by doing and uses drawing, songs, role play, craft, show-and-tell, and other hands-on tasks.
Storytelling, role play, discussion	Explicit + implicit	Role play for greetings, stories with moral lessons, picture discussion, and teacher questioning support communication and empathy.
Group and collaborative learning	Explicit + strong	Sharing, collaboration, group pattern-making, group games, and shared activities support cooperation and relationships.
Outdoor/observation/experiential learning	Implicit + strong	School visits, weather and nature observation, resource collection, and learning corners link content with direct experience.
Teacher guidance	Explicit + strong	Teachers are positioned as pedagogical leaders who design activities around learning objectives and twenty-first-century skills.

Discussion

The results show that the federal ECCE scheme of work selected offers a good amount of curricular support for life skills-based sustainability education, although integration is not consistent across competency areas. The overall picture is of high levels of visible classroom interaction and cognitive engagement, and low levels of internal emotional coping and systematic conservation behaviour.

The high level of representation of communication, interpersonal relationships, self-awareness, decision making, problem solving and creative thinking is in line with a holistic approach to early childhood education. These skills are naturally suited to play-based learning as they can be practiced through conversation, role play, drawing, group activity, observation and guided problem solving. NAEYC (2020) highlights the importance of active engagement, exploration, play, and meaningful interaction as key components of developmentally appropriate practice, and

Ardoin and Bowers (2020) provide evidence that active early environmental education can contribute to cognitive, affective, and social-emotional development. These principles are evident in the general pedagogical approach of the analysed curriculum.

One of the contributions of the analysis is the differentiation between explicit and implicit life skills. Some skills were clearly identified, and others were embedded in the activities. This is particularly evident in critical thinking and empathy. Critical thinking was not always explicitly identified as a skill, but was frequently included in the categories of classifying, comparing, observing and discussing. Empathy was seen in respect, kindness, diversity, collaboration, caring for living things and concern for others, but was not often explicitly mentioned. This is not in itself a weakness, as early childhood curricula sometimes work in this way. But if it is always implicit, teachers may differ regarding whether they see it as an intended outcome. Explicit naming can thus enhance planning coherence without formalizing the competency checklist of ECCE.

Coping with emotions and particularly coping with stress is the weakest domain and deserves more attention. Emotional awareness was present in PSED, but there was limited support in the curriculum for young children to recognise and regulate challenging emotions, to manage frustration, to express fear safely, and to calm down in challenging situations. This gap is significant as emotional regulation is key to participation, relationships and wellbeing. Coping with emotions and stress is a part of the WHO life-skills framework and is included as a cognitive and interpersonal skill. Effective functioning relies on coping skills of the child (World Health Organization, 1994). In this area, it would not be necessary to add clinical or abstract material. Age-appropriate routines may include identifying emotions, breathing exercises, calming exercises, talking about emotions through stories, emotion cards, seeking help, and guided conflict resolution.

The sustainability results also show a significant gap between awareness and action. Environmental responsibility was evident in topics related to weather, living things, habitats, plants, resources and responsible citizenship. Health and hygiene were even more tangible with repeated hand washing and health-food activities. In contrast, resource conservation was not as behaviorally developed. Children were taught about the natural and man-made resources, while there was little repetition of the need to conserve water or electricity, reduce waste, or make wise consumption choices. ESD literature highlights competencies and action rather than just awareness as a prerequisite for sustainability (Rieckmann, 2018; UNESCO, 2020). One of the most practical strategies to take children from awareness to behaviour in early childhood is through the repetition of classroom routines.

The high social responsibility aspect is also noteworthy. The curriculum linked sustainability to greetings, courtesy, cooperation, responsible citizenship, family, school, culture and respect for diversity. This expands the scope of ESD, which is not only about protecting the environment, but also about social sustainability and children's participation, as highlighted in research (Borg & Gericke, 2021; Borg & Pramling Samuelsson, 2022). It is especially useful in ECCE where young children first learn about sustainability through relationships and before they can grasp complex global systems. A curriculum that teaches children to share, including others, communicate respectfully, and participate in collective care is laying a social foundation for sustainable living.

The findings regarding pedagogy indicate that the scheme's strength is not only the content itself but the way in which it is expected that children will learn. Through play, activity, storytelling, role play, group work, observation, visits, collection of objects and teacher-guided discussion, the conditions are set for life skills to become lived experiences. This contributes to the overall argument of the thesis that ECCE sustainability education should not be a standalone, abstract topic. Rather, sustainability is manifested in the way children engage in routines, problem-solving, communication, cooperation and caring for others and environments.

Meanwhile, good teaching does not obviate the need for more precise curriculum definition. There is some scope to improve the linkage between named skills, activities and expected behavioural indicators. For instance, an activity about caring for plants could specifically be linked to empathy, responsibility, observation and care of resources; a group activity could be linked to cooperation, communication, turn-taking and conflict resolution; a hand washing activity could be linked to health, self-awareness, sequencing and responsibility. This alignment would enable teachers to see the life skills goal of activities that they might already be using.

So, the analysis proposes to move from general integration to explicit developmental progression. There are a lot of elements of life skills and sustainability already in the curriculum. The next step is to increase the visibility of weaker competencies, make sustainability themes recurring actions, and make outcomes, activities, teacher guidance and observation more explicit. This would align with UNESCO's vision for sustainability to be integrated throughout the curriculum, its pedagogy, its learning outcomes and its assessment (UNESCO, 2024).

Implications for Curriculum Development and Practice

The analysis has several practical implications. First, emotional competencies should be reinforced as a curricular area, in the current integrated curricular structure. The document already recognizes emotions and self-confidence, but could expand these to explicit, age-appropriate outcomes for naming emotions, coping with frustration, asking for help, calming down, and solving minor peer conflicts. These outcomes need not be formal mental-health lessons but can be play- and story-based.

Secondly, resource conservation should be made a part and parcel of routine activities. These are some examples of behaviours which could be practiced repeatedly in the classroom: turning taps off properly, only using the paper that is needed, reusing safe materials in art, turning off unused lights where appropriate, separating out reusable items and caring for shared classroom resources. Conservation developmentally would be more concrete if short routines comprising resource-saving are repeated throughout the year.

Thirdly, the term empathy needs to be more precisely defined. Many values related to empathy are already part of the curriculum (respect, kindness, collaboration, diversity, care for living things), but with explicit labelling, teachers will be able to see empathy as a life skill and not just a moral value. Likewise, critical thinking can be more consistently detected in observation, classification, comparison, questioning and problem-solving activities.

Fourthly, the solid pedagogical foundation should be maintained. The focus of the document on play, learning by doing, active participation, teacher leadership, collaborative learning and real-life observation is very much in line with ECCE practice. Curriculum strengthening should thus provide clarity without adding to the academic burden or making life skills a worksheet exercise.

Lastly, there may be some simple observation indicators of life skills in the curriculum guidance. Activity and value guidance are provided in the source document; however, during the qualitative analysis, some developmental outcomes were observed to be less specific. Brief behavioral statements like “shares materials with peers” or “expresses a preference appropriately” or “names an emotion” or “helps care for a plant” or “participates in a group task” may be appropriate for young children and could be used to link daily activities with developmental observation.

Limitations

The results should be analyzed in the context of the documentary design. This analysis was based on FGEI scheme of work for Class ECCE (Pre–1) for the academic year 2026–2027, which does not necessarily reflect all ECCE curricula being used in Pakistan. Life skills and sustainability may be organized in different ways in provincial,

private, community-based and NGO-supported systems. The study focused on the intended curriculum and not the enacted curriculum; thus, it is not possible to determine whether teachers enact the activities as written or how children experience them. Implementation would need to be investigated using classroom observation, teacher interviews and child-centered methods. The explicit–implicit distinction is also an interpretive judgement, especially in the case of latent content. The original study was conducted using a predefined framework and evidence-tracing procedure but did not report formal intercoder agreement. Future studies might enhance dependability using multiple coders, a documented audit trail or consensus coding. Lastly, the WHO life-skills framework was used, which gave a clear deductive structure but might not fully represent all culturally valued competencies or sustainability dispositions in the Pakistani ECCE context.

Conclusion

Based on the qualitative content analysis, it is concluded that the selected Federal Government ECCE scheme of work is meaningful in incorporating life skills and sustainability in an activity-based and child-centered curriculum. Communication, interpersonal relationships, self-awareness, creative thinking, decision-making and problem-solving were very prominent; critical thinking and empathy were present but often implicit; coping with emotions and coping with stress were rather weak. Environmental awareness, health and hygiene, social responsibility and citizenship were used as indicators of sustainability, which were more consistently translated into repeated behaviour, while resource conservation was less practiced.

The most successful aspect of the scheme is its pedagogy, which is based on play, learning by doing, co-operation, observation, storytelling, role play and teacher guidance. This is a good foundation for sustainability learning as live classroom practice. The primary need is therefore not to replace curricula wholesale, but to make developmental alignment more explicit: to make emotional-coping outcomes clearer, to make conservation routines more robust, to make empathy and critical-thinking labels more visible, and to make simple observation indicators more apparent in relation to everyday activities. Further development of these aspects might help to better integrate the environmental, social and personal aspects of sustainability into the curriculum in early childhood education.

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