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Impact of Nature-based Learning on FLN Skills: Perspective and Approaches for ECCE Educators of Meghalaya

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Abstract

Nature-based learning offers a holistic and experiential approach to early education. It fosters a love for learning and provides a supportive context for developing foundational literacy and numeracy skills. This paper attempts to incorporate nature-based learning into foundational education and study its impact on early learners' foundational literacy and numeracy skills. The idea of nature-based learning is not new in India; it is deeply rooted in India's traditional wisdom, knowledge systems and practices (Sharma & Kanaujia, 2020). However, owing to India's colonial history and its urgent developmental challenges, a significant shift occurred in the values related to the environment, which has impacted the education system. NEP 2020 underscores the importance of adopting experiential learning in all stages of education (NEP Para 4.6). Nature-based learning is one of the best approaches to support the holistic development of children.

INTRODUCTION

Nature-based learning is the learning that takes place in natural surroundings in which activities take place in natural settings. As Jordan and Chawla (2022) stated, "Nature-based learning is where elements of nature have been brought into

built environments, such as plants, animals, and water." It incorporates outdoor experiences and nature-based activities, and thus makes the environment an educational tool. "Nature is a great teacher," as stated by William Wordsworth. This approach is often characterised by outdoor classrooms, hands-on experiences

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in nature, and a focus on connecting with the natural world. Being outdoors engages students' senses in ways that indoor environments cannot.

As Rousseau stated, "A proper education allows nature to teach humans according to their nature." Children can explore literacy and numeracy concepts in the context of the natural environment. That would not only make learning more meaningful but also allow the children to experience the wonders of nature. Before the development of formal educational institutions, nature and the environment were used as teachers (Sobri, Iryani & Mulyadi, 2021). Nature-based learning develops early learners' empathy, builds their connection with their immediate natural environment, fosters a positive mindset and supports overall well-being.

Benefits and Challenges of Nature-based Learning

Schools in urban areas lack opportunities for nature-based learning due to limited space or degraded natural environments, whereas schools in rural areas still have several single-teacher schools. Those teachers are burdened with heavy workloads that hinder them from using nature as a context and resource for learning. Additionally, it is essential to consider the management and reduction of risk linked to outdoor learning, including factors, such as weather conditions, safety concerns, health considerations, the presence of children with special

needs and behavioural issues (Ozturk & Ozer, 2022). This involves ensuring sufficient preparation, supervision and support measures.

Despite all these challenges, nature-based learning benefits children in many ways. It often involves hands-on experience, which allows children to interact directly with the environment. This could involve conducting experiments outdoors or participating in the wilderness. Integrating nature with education provides an opportunity for young learners to develop a sense of responsibility towards the environment, and encourages observation and inquiry. Children explore, ask questions, and learn critical thinking and problem-solving skills, which can ultimately develop the concept of numbers and language.

RATIONALE

Louv (2011) said, "Children need nature for the healthy development of their senses, and therefore, for learning and creativity." It is a matter that needs to be appropriately addressed, so that children are not deprived of nature-based learning. We can see in the present scenario that nature-based learning strategies are not used much in the learning process due to various factors. During the foundational stage, it is crucial that the curriculum is contextualised and rooted in content and pedagogy derived from children's life experiences reflecting the familiar cultural and social context in which they are growing (National Curriculum

Framework for Foundational Stage 2022: Section 1.5.2). Being outside the classroom in a natural setting promotes sensory exploration in children. It allows them to observe, listen, touch, smell and even taste elements of the natural world. It is so much easier and enjoyable for children to understand what a fish is by directly observing it and seeing it right in front of them rather than reading or hearing about it in a book or a story. Hence, documentation of nature-based learning in schools is needed.

Moreover, by documentation of nature-based learning in schools, educators, policymakers, and Early Childhood Care and Education (ECCE) educators will be able to understand the importance of conserving nature and taking care of our future. Furthermore, fostering global perspectives in local educational initiatives of nature-based learning could be one of the paths to map foundational literacy and numeracy skills of the early learners in the ECCE centres of Meghalaya. That can change the perspective and approaches of the ECCE educators in the state.

METHODOLOGY

Qualitative research was conducted over a targeted sample in natural settings.

Population and Sample

A model ECCE centre of District Institute of Education and Training

(DIET), Thadlaskein adopted by the Directorate of Educational Research and Training (DERT) Meghalaya, DIET Practicing School, Thadlaskein, and four lower primary schools from both urban and rural areas of West Jaintia Hills district of Meghalaya were taken as study sites for the paper. The research sample consisted of one ECCE centre [N=22 (boys=10, girls=12)] and four lower primary schools [N=79 (boys=37, girls = 42)]. The subjects were aged between three to nine years and were from the West Jaintia Hills district of Meghalaya. The researcher selected the sample based on the willingness of schools to participate in the study and those schools who have already conducted such activities before in school.

Tools Used

The observation schedule and interview schedule are taken as data collection tools.

Data Collection Procedure

With prior permission from the sampled schools and ECCE centre, an active form of participant observation was followed for data collection to determine a child's literacy and numeracy skills through nature-based learning. Verbal communication was maintained with the students while they were engaged in exploring the environment in the school playground and the green zone near their school premises.

MAJOR FINDINGS ON NATURE-BASED LEARNING FOR CHILDREN IN JAINTIA HILLS OF MEGHALAYA

Deprived of engagement with the natural environment, individuals may experience a reduction in their capabilities. Louv (2011) said, “We cannot protect something we do not love, we cannot love what we do not know, and we cannot know what we do not see. Or hear. Or sense”. Children possess an innate curiosity and require opportunities to investigate, test, handle, innovate and gain knowledge about their surroundings. As children venture

Tpep Pale Govt L.P. School

Tpep Pale Govt L.P. School is situated in Jowai town. Despite the limited natural space or environment, the students were taken for a nature walk. They were excited and curious to explore and examine things around them. As the children strolled, they engaged in a lively conversation about various topics that interested them. After a few minutes of walking, they began to ask questions, some of which were insightful and amusing— ‘why are leaves of some plants itchy like beard?’ and ‘why are leaves half-dead?’



Figure 1: Students of Tpep Pale Govt L.P. School

into exploring their environment through their senses, they survey their environment by touching, holding and handling whatever they see, as well as by listening and responding to sounds, music and rhythm, and getting elevated by magical noises (NCFSE 2023: Section 1.8.2.). Some nature-based learning activities are being conducted in different schools in Jaintia Hills.

Competencies

By engaging in nature-based learning, children started comprehending the world surrounding them by interpreting and making sense of it through what they ‘see’. Students’ exposure to nature improves their self-regulation, concentration and attention span, and stimulates their curiosity, which contributes to their cognitive skills.



Figure 2: Students of DIET L.P. Practicing School

DIET L.P. Practicing School

DIET L.P. Practicing School is semi-urban and is situated within the campus of DIET, Thadlaskein, West Jaintia Hills District. After introducing the learning theme to them, they were directly taken to explore the green zones in and around the DIET campus, which is called the ‘Garden of the Soul’. The students explored elements which consisted of both living and non-living things. They, then, started to discuss among themselves and began to appreciate, compare, and differentiate the shape, size, colours, textures, and patterns of different leaves and flowers. They arranged the leaves from the biggest to the smallest.

The children also described the shapes and sizes of stones and rocks found in the surroundings.

Competencies

Nature-based learning provides an opportunity for students to explore and develop motor skills. It enhances memory, problem-solving skills, cognitive skills, oral language, vocabulary and pro-social behaviour. This approach also helps speed up their language development. As they appreciate nature, they also begin to appreciate, respect and accept their differences. Children develop an attitude of care and nurturance towards plants, animals and other life forms.



Figure 3: Students of DIET ECCE Centre

DIET ECCE Centre, Thadlaskein

This is a model ECCE centre at DIET, Thadlaskein, adopted by the Directorate of Educational Research and Training (DERT), Meghalaya. These children are provided with a flexible learning environment. Here, they are free to move, explore and interact with their surroundings, which motivates them to learn better in the outdoors. Assisted by their teacher, they were taken to a stream nearby. There were so many things around that stream that encouraged their curiosity. They were excited and interested in examining the bugs and worms. They ran around to catch butterflies and bees. They played by the stream and didn't want to leave that place. They were splashing, kicking and wading the water in the stream. Children also had their lunch under the tree with friends along with the teachers, which is a good practice to socialise.

Competencies

Nature-based learning helps to cultivate children's creativity and imagination, and develop positive self-concept and respect for others' feelings and rights. As they explore and interact with their natural surroundings, they use nature as inspiration for storytelling, language play and numeracy-related activities. Children develop their motor skills by playing with water.

Phlongingkhaw Elementary School

Though Phlongingkhaw Elementary School is a rural school, it has introduced many initiatives to create environmental awareness among its students. A well-constructed 'Kitchen Garden' is one of its good initiatives. Nature-based learning has become a part and parcel of the school calendar. Students spend their leisure time in the



Figure 4: Students of Phlongingkhaw Elementary School

garden. They have sowed different seeds (such as kidney beans, cauliflowers, tomatoes and pumpkins) in the garden. It is the duty of students to look after and nurture the garden. Gardening has developed in them a curiosity for identifying and inspecting various wildflowers, weeds, leaves, ants, worms, pebbles, butterflies and bugs.

Competencies

Kim et al. (2020) stated that “the students experienced self-directed and cooperative learning, they engaged in the scientific process, demonstrated nature-friendly attitudes, and showed an increase in their sense of wonder

when involved with nature.” Nature involves the concepts of shapes, patterns and quantities which provide a concrete and practical foundation for numeracy skills. Therefore, children develop many of these concepts while spending time in the garden.

Kdiap Govt L.P. School

Kdiap Govt L.P. School is a remote school in West Jaintia Hills. Here, students are always in direct contact with nature. Therefore, integrating nature into education through a nature-based learning approach aims to acknowledge the potential impact of



Figure 5: Students of Kdiap Govt L.P. School

students' daily interactions with nature in shaping their understanding of the natural world. The students were taken for a visit to the local woods. They were instructed to find any two elements that interest them and describe the reason for their choice. With enthusiasm, the students brought things that built their concept of sorting and comparing objects according to various properties like size, shape, colours, texture, patterns, etc. (as mentioned in the *NCFFS 2022*: Section 4.4.10 pg 111: Teacher's Voice 4.4F).

Competencies

Children observed, enquired, explored, asked questions and sought answers. Thus, nature-based learning promotes critical thinking and problem-solving skills. It provides sensory-rich experiences that enhance children's cognitive and emotional development.

Psiar Govt L.P. School

Psiar Govt L.P. School is another remote school in West Jaintia Hills. The students are always in direct

contact with nature. Hence, integrating nature into education through a nature-based learning approach aims to acknowledge the potential impact of students' daily interactions with nature in shaping their understanding of the natural world. The students were taken for a visit to a small forest nearby. They were instructed to find any wildflowers, weeds, leaves and any other plants that interest them and describe the reason for their choice. The students discovered different kinds of plants, wildflowers and leaves. They even asked questions, some of which were very insightful and amusing— 'why are some leaves shaped like a scissor?' These questions helped children develop green consciousness and harmony with nature.

Competencies

Through nature, children can learn the concepts of shapes, patterns and quantities, which provide a concrete and practical foundation for numeracy skills. Children can also develop a sense of responsibility for the environment



Figure 6: Students of Psiar Govt L.P. School

while engaging in outdoor experiences, and thus contribute to a more environmentally conscious future.

Impact of Nature-based Learning on Early Learning and Foundational Skills

Linking nature to learning in the early years is a fun and constructive approach to education that channels the innate curiosity and fascination of young children (Bababop, 2023). Nature-based learning enhances social skills and increases interactions with peers and teachers. By engaging in nature-based learning, students get the opportunity to explore indigenous knowledge and traditional ecological practices, and learn about the historical importance of natural landmarks in their local areas. This fosters an appreciation for their own culture and that of others, which contributes to the development of empathy and open-mindedness.

Furthermore, group activities promote discussions, wherein children listen to others and describe their own observations; participating in such activities help to develop language skills. Additionally, nature-based learning frequently includes facing real-world challenges and resolving problems in natural environments. This encourages students to engage in critical thinking, analyse information and formulate imaginative solutions to environmental issues. Last but not the least, nature-based learning encourages holistic development

by nurturing students' physical, emotional, social and cognitive skills.

Meghalaya Perspective and Approaches for ECCE Educators

Meghalaya, a land blessed with abundant natural beauty and varied landscapes, provides a unique backdrop for ECCE educators to contemplate and embrace nature-based learning experiences, and incorporate it into the curriculum. This will help to create a culturally rich and locally relevant nature-based learning environment that sparks children's curiosity and lays the foundation for a lifelong connection with the natural beauty of Meghalaya. Certain eco-friendly practices which reflect the wisdom of our elders or local experts, who hold a treasure trove of knowledge about sustainable practices, traditional medicinal plants, and the beautiful ways in which we can co-exist with nature, can also be promoted by including them in the curriculum.

CONCLUSION

In conclusion, nature-based education needs to be explored and developed because it contains values and temperament required for educational reform, which are aimed at changing learning outcomes by enhancing children's connections with nature. This approach not only promotes growth and well-being but also fosters environmental awareness. Therefore, incorporating nature-based learning into the early years is paramount for sustainable development and

progressiveness. Teaching perspectives and approaches weave this ingredient in the daily schedule at all foundational learning centres.

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