
PROJECT LEAP (Learning Environment Advocating Play) Exploring the Impact of Inquiry-Based Learning on Learners’ Engagement Through Play-Based Pedagogy

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Summary—The research initiative known as PROJECT LEAP - Playful Pathways was conceptualized to study the impacts of inquiry-based learning on student engagement through playful pedagogies in the Datu Lompipi Elementary School. It aimed to achieve all-rounded growth: physical, cognitive, and social by using an outdoor learning playground, which should fill in the gaps relating to active learning, wellness, and environmental awareness. The activity started in January 2024, during the second quarter of the school year. It transformed part of the school’s grounds into a multi-purpose learning environment using eco-friendly materials, among which were tires and woods. The play-design encourages the students to engage in inquiry-based, experiential learning that aligns with the Department of Education goals for all-rounded growth of learners. In this regard, the process of implementation means stakeholder engagement, resource allocation to local communities, parents, and educators. The playground was broken into play structures and learning zones with an outdoor classroom to support physical education, and interdisciplinary learning. The operations allowed it to respond to the acute challenges facing education like absenteeism, lack of proper parental care, and social exclusion. After implementation, the playground has seen improved outcomes in the respondents’ physical health, increased cognitive engagement, and enhanced relationships between schools and communities. The project’s sustainability plan emphasized ongoing maintenance, stakeholder involvement, and continuous improvement to ensure long-term educational benefits. This innovation exemplified a cost-effective and community-driven approach to enhancing learning environments.

Keywords— Play-based pedagogy, Outdoor learning, Community involvement

I. OVERVIEW

Project LEAP (Learning Environment Advocating Play) is an innovation that aimed to improve student performance, health, engagement, and community involvement as well by employing a play-centered pedagogical approach. The project was established at Datu Lompipi Elementary School. Research underscores the importance of play in children’s physical, intellectual, and social growth, contributing to overall well-being and academic success (Sharif, 2014). The playground was built from recyclable materials with the aim of being an outdoor learning playground where students can play and learn. Activities used in employing play-centered lessons involves merging of physical activity with educational experiences and lessons which in turn enhances the physical, cognitive and social growth of learners. It addresses very serious educational challenges, such as absenteeism, inactive learning time, the need for inclusion on the one hand, and environmental awareness and community in-

volvement, on the other. It just so happens that all these promote academic achievement and complete development. The design of the school was created with the input that came from basic needs that indigenous students, particularly the Obu Manuvu tribe, require since they often face the challenge of language and find themselves detached in the usual school environment. The PROJECT LEAP, created a vibrant learning community, which aimed to raise the performance among the scholars, promote ecological sensitivity, and establish community among the school population. The studies conducted by the University of Wisconsin (2023) and Ateneo Institute of Sustainability (2022) demonstrate that outdoor learning environments contribute immensely to increasing engagement of students, enhancing health outcomes, and strengthening environmental stewardship.

II. INNOVATION DESCRIPTION

PROJECT LEAP is an innovative education programme which converges play and learning into an outdoor environment. Structures built of recycled materials - also painted tyres and wood - are meant to be environmentally friendly as well as educational. This innovation was designed to ad-

dress the gap in active and experiential learning practices in underprivileged communities around the world whose learners have little or no alternative means of adequately engaging with learning material. The main features of this innovation include:

The amalgamation of learning and play is exemplified in playgrounds that combine conventional play equipment with educational activities, facilitating students' participation in inquiry-driven learning during recreational time. Pedagogy that emphasizes play fosters exploration, experimentation, and problem-solving in a naturalistic setting, which is consistent with findings that underscore the cognitive and social advantages associated with outdoor education (University of Wisconsin, 2023).

Natural Environment and Eco-Friendly Design: The use of recyclable materials in playground building encourages sustainability while educating the children on principles of environmental conservation. This is in line with the mandate of the Department of Education: "encourage the development of environmental consciousness and responsible attitudes among learners."

Inclusivity and Accessibility: The playground is designed to accommodate all students, including those with special educational needs. The space provides a safe and motivating environment where students from diverse backgrounds can learn through play, fostering a sense of inclusivity and collaboration (Khan, McGeown, Bell, 2019).

Safety and Supervision: All students are kept safe at all times. The design accommodated many safety standards, and teachers were trained to supervise activities so that the playground would be a secure learning place.

This environment provision for PROJECT LEAP fosters students' comprehensive development by fulfilling physical, cognitive, and emotional needs. Moreover, it enhances pedagogical performance due to its ability to provide an innovative instrument that integrates different academic fields under a single outdoor environment.

III. INNOVATION STATEMENT

The central aim for PROJECT LEAP is to improve student engagement and education attainment by means of a play-based, inquiry-based pedagogical approach. This program was conceptualized as a response to the weak experiences that students and teachers had in class-based learning spaces characterized by limited opportunities for active engagement and exploration of the environment and thus hindered student success. In creating an outdoor classroom play space, the program intended to address such shortcomings and deliver a more vibrant and engaging pedagogical experience.

PROJECT LEAP was designed to develop physical, cognitive, and social skills through inquiry-based learning experiences. The play-space engaged students in real-world, practical problem-solving activities that encouraged critical thinking and creativity. The program also enhanced the integration by creating an educational space where students of varying abilities and circumstances could engage in meaningful and collaborative efforts. As a result, this innovation is aligned with the aims of the Department of Education to establish learner-centered, inclusive, and equitable learning environments that meet the diverse needs of the learners

(DepEd, 2023).

IV. IMPLEMENTATION PROCEDURE

a. Process Flow Framework

PROJECT LEAP was established using a planned and collaborative process. The initiative was launched with a needs assessment of the students, but more specifically with the indigenous people's difficulties and also with the students who have very limited opportunities for involvement in active learning approaches. The playground design will be based on outdoor education researches that have helped support and provide involving natural surroundings for the development of the students' physical and intellectual aspects (University of Wisconsin, 2023).

The method used in the innovation employing the Multiplication Grid involves visual and hands-on learning. By using the grid, pupils learn to apply a visual and touch-based approach to concrete multiplication concepts. The teacher uses a grid to visualize multiplication operations, spot the patterns, and come across the solutions of the multiplication problems, thereby improving their understanding and knowledge of the multiplication theories. The approach is based on human visual information processing competence, thus enabling learners with different styles of learning to connect with the learning process better.

b. Project Management

Efficient project management techniques paved the way for the effective implementation of PROJECT LEAP. School administrators oversaw the initiative, ensuring that it stayed aligned with the educational objectives of the school and the mission of the Department of Education. The teachers would incorporate outdoor learning within their instructional plans, while the parents and community stakeholders assisted in the construction and maintenance of the playground through bayanihan efforts.

Continuous stakeholder engagement ensured the on-time completion of the project, and the easy resolution of any arising issues or challenges. Involving parents and the general community fostered a feeling of ownership about the project, which helped its sustainability and overall success.

c. Timeline

The implementation timeline for PROJECT LEAP was segmented into three phases:

Pre-implementation (1 month): It involved planning and design; procurement of materials, and stakeholders' consultation. **Implementation (1 month):** The playground was built, and instructors were trained to lead it as part of their instruction. The playground was ready for use through a ribbon-cutting event with parents, instructors, and community members in attendance. **Post-Implementation Stage (After 1 month):** This focuses on the study of how much the playground had improved the students' engagement and learning. Ongoing feedback from the students, parents, and teachers is used to identify the weaknesses of the playground.



Fig. 1: Outdoor Learning Playground

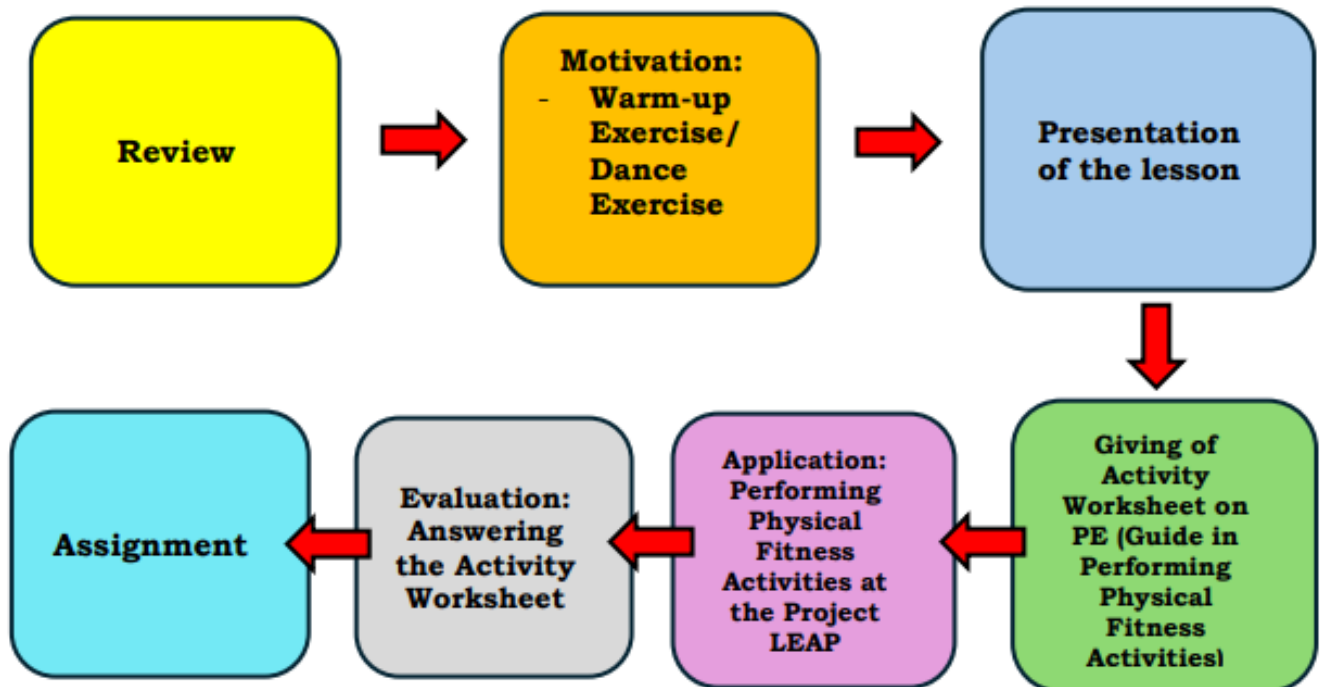


Fig. 2: Process Flow

d. Resource Utilization

The materials utilized in designing the playground were largely eco-friendly and procured directly from the local community. Platforms were built with recycled tires and wood, while paint and other materials were donated by the

members of the locality. Incorporating nature-friendly materials not only reduced the environmental impact of the project but also enhanced the learning potential of the educational matter on sustainable responsibility. Teachers used the playground for curricular and interdisciplinary teaching: science, mathematics, and physical education were integrated through

outdoor learning.

e. Progress Monitoring

The development and progress of the project would be closely monitored through a series of periodical assessments that examined the levels of student participation as well as their performance in school. For this to be possible, the teachers compiled their detailed and specific records on how the students participated while also conducting the means for surveys aimed at creating useful feedback regarding the effectiveness of the playground in enhancing and improving the learning experience of the students. The information and data obtained from these activities would then be analyzed and used to make the necessary adjustments to the curriculum so that the playground remained effective in meeting the diverse needs of all learners who participated in the project. In addition, the tremendous accomplishment of the project was shared and brainstormed at LAC sessions. This also gave other educators the opportunity to observe and later adapt such innovative practices and strategies in their schools.

V. SUSTAINABILITY PLAN

A comprehensive maintenance plan was developed to ensure the sustainable feasibility of PROJECT LEAP. The playground needs to be regularly inspected to ensure the safety of the installations. The minor repairs are done by the volunteers of the community. Involving parents and the local community in maintaining a playground can ensure its sustainable longevity. The school also plans to seek additional funding for improving the playground and incorporating more educational areas.

It aims at the systematic integration of outdoor classroom experiences into the curriculum so that the playground becomes a vital and integral learning resource. There will also be continuous feedback sought from parents, students, and teachers for improvements and changes aimed at the evolving needs of education. Through building a strong sense of community engagement and ownership, the project is expected to impact the school and the students in the long run.

Outputs/Outcomes	Beneficiaries
Physical Health and Fitness	Learners
Encouraged physical activity, improving muscle strength, coordination, balance, and flexibility. Contributed to cardiovascular health and reduced obesity rates.	
Cognitive Development and Behavioral Improvements	Learners
Stimulated creativity and problem-solving through outdoor activities, enhancing fine and gross motor skills. Reinforced classroom concepts through hands-on learning.	
Enhanced Teaching Opportunities	Teachers
Diversified instructional methods through outdoor learning, integrating real-world experiences and environmental education.	
Improved Classroom Management	Teachers
Provided an alternative learning space, improving student behavior and engagement.	
Stronger School-Home Connections	Parents
Fostered trust and stronger home-school connections, encouraging parental involvement and collaboration.	
Increased Safety and Supervision	Parents
Prioritized safety, building positive relationships with parents.	
Enhanced School Reputation	School
Boosted school's reputation for being innovative and providing a well-rounded education, attracting more students.	
Greater Adaptability and Resilience	School
Enabled continued learning during disruptions, demonstrating resilience and creativity.	

Fig. 3: Innovation Output/Outcomes

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VI. APPENDICES

Before



Fig. 4: Before



Fig. 5: During



Fig. 6: After