

LEARNING STEM AT EARLY CHILDHOOD IN NIGERIA : NON-FORMAL APPROACH



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1. Contextual Background

Attainment of SDGs hinged on national development has a multi-dimensional approach to the teaching and learning of STEM especially at early childhood. This will be a fulcrum on which Quality Education (SDG 4) rests. It also serves as a catalyst for fostering innovation, one of the three (Is), and major components of SDG 9 (infrastructure and industry) for sustainable development. Early Childhood Education (ECE) though aims to push, inspire and nurture children in their early years in Nigeria (FRN, 2012), yet major challenges created in its operations need to be addressed, using non-formal approach such as out-of-school activities and STEM Play Cycle.

2. Theoretical Frameworks - Non-formal approach - STEM Play Cycle

- STEM concepts are incorporated into learning at early childhood using out-of-school activities, community-linked integrated approaches (Ogunlade, 2005) and STEM Play Cycle (Tunncliffe, 2021).
- Exposure of children at tender age to the fundamental principles of STEM through field trips and excursion to science-based industries.
- Development in children, the capability to acquire and put into use scientific skills via parent interventions at home.



Figure 1: The STEM Play Cycle (Tunncliffe, 2021)

4. Results

Utilizing STEM Play Cycle to create curiosity, develop skills for investigation and observation in children.

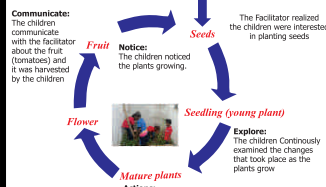


Figure 2: Life Cycle of Tomatoes (Planning Activities about Exploration and Investigation)

5. Ways used to incorporate STEM at early childhood:

(i). Children Building Blocks



(ii). Identifying Shapes



(iii). Teaching Vocabularies



(iv). Children Playing Snakes & Ladders



6. STEM can be a lot of fun for children when games are built in teaching / learning process.

The use of snakes and ladders board game as played by children in (iv) is essential for childhood education and development.

7. Conclusion:

- STEM games/toys improve concentration and focus at early childhood.
- Teach teamwork and collaboration among children.

References

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