UPCYCLING ACTIVITIES FOR ENVIRONMENTAL AWARENESS AND CREATIVITY AMONG PRIMARY SCHOOL PUPILS IN NIGERIA

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Abstract

This study examines upcycling activities for environmental awareness and creativity among primary school pupils in Nigeria. Upcycling, a process that involves creatively repurposing waste materials, offers a dual advantage of reducing waste and fostering creativity. It explores the integration of upcycling activities into the curriculum of Nigerian primary schools as an educational tool for promoting environmental sustainability and developing creativity. It highlights the environmental challenges faced by Nigeria, including inadequate waste management and growing waste accumulation and positions upcycling as a practical and cost-effective solution. Through upcycling, primary school pupils can gain hands-on experience in waste reduction, resource conservation, and innovative problem-solving. This approach not only raises awareness about environmental issues but also nurtures critical thinking, collaboration and artistic expression. The paper also addresses the challenges of implementing upcycling in Nigerian schools, such as limited resources, lack of teacher training and inconsistent waste management systems and offers useful suggestions for overcoming these barriers through partnerships, curriculum integration and localised solutions. By incorporating upcycling into primary education, Nigerian schools can empower pupils to take responsibility for their environment, inspire creative thinking and contribute to the broader goal of sustainable development. This initiative presents an opportunity to shape a generation of environmentally conscious, innovative and proactive citizens prepared to tackle the ecological challenges of the future.

Keywords: *Upcycling, Environmental Awareness, Creativity, Sustainable Practices, Critical Thinking*

Introduction

In an era defined by rapid industrialisation, urbanisation and increasing waste accumulation, environmental degradation has emerged as one of the most urgent global challenges. Across the world, ecosystems are under strain from factors like deforestation, pollution, and climate change, with developing countries like Nigeria facing unique and often intensified environmental challenges. Nigeria, a country of over 200 million people, grapples with an escalating waste crisis, where urban centers, such as Lagos, generate millions of tons of waste annually (World Bank, 2018). In many parts of Nigeria, waste management systems are either inefficient or nonexistent, resulting in widespread pollution, clogged waterways and environmental hazards. As waste continues to accumulate in landfills, rivers and streets, the situation has become a critical issue for public health and sustainability (Akinyemi and Adeyemi 2020).

Given the environmental pressures facing the nation, the need for environmental education is more pressing than ever. Schools serve as key institutions for shaping the values and habits of future generations. For countries like Nigeria, with limited resources for large-scale environmental interventions, education remains a powerful tool for sustainable development. Environmental education can cultivate a sense of environmental responsibility and encourage sustainable practices from an early age (UNESCO, 2019). This is where upcycling, the practice of creatively reusing materials that would otherwise be discarded can play a transformative role. Upcycling, as an innovative approach to waste management and creative expression, offers a practical, hands-on means of addressing both environmental and educational needs in Nigeria's schools.

Upcycling not only offers a solution to the growing problem of waste, but also serves as a means to cultivate creativity and critical thinking among students. Through upcycling activities, children can repurpose materials like plastic bottles, cardboard, fabric scraps and newspapers into functional or decorative items. These projects not only help to reduce the burden on waste disposal systems but also offer a valuable opportunity to teach students about sustainability, the finite nature of resources, and the importance of conservation (Liu et al., 2021). Moreover, upcycling fosters a sense of ownership and responsibility for the environment, encouraging children to view waste not as garbage but as valuable material that can be transformed into something new and useful (Barton, 2017).

The educational benefits of upcycling extend beyond environmental awareness to the development of essential skills for the 21st century. Creativity, critical thinking, problem-solving, and collaboration are just a few of the skills that are enhanced through upcycling projects. As students work together to design and create new objects from discarded materials, they learn to think creatively, collaborate with peers, and find solutions to challenges. These experiences contribute not only to their cognitive development but also to their ability to engage meaningfully with real-world problems (Nicolson, 2020). For Nigerian pupils, upcycling activities can help bridge the gap between traditional educational methods and more innovative approaches that encourage hands-on learning and creativity.

The relevance of upcycling in the Nigerian context is heightened by the local waste challenges faced by communities across the country. In Nigerian cities, especially in informal settlements and rural areas, large amounts of recyclable materials like plastics, glasses, cellophanes and papers are often left to pile up due to inadequate waste management systems (Ogundele & Ayodele, 2020).

This waste often ends up in landfills or, worse, in rivers and streams, contributing to environmental degradation and health risks. Upcycling provides an immediate, local solution by utilising readily available materials and transforming them into useful or artistic products. For example, plastic bottles can be used to create school supplies, while old clothes can be turned into bags or decorations. By involving children in such activities, schools can directly address local waste problems and teach students to value waste as a resource rather than a problem.

In addition to environmental benefits, upcycling also aligns with Nigeria's cultural values and creativity. The country has a rich tradition of craftsmanship, and many communities have long relied on traditional methods of recycling and reusing materials (Eze & Ogu, 2021). Integrating these practices into the classroom through upcycling not only teaches students about modern environmental challenges but also connects them to cultural heritage and local resourcefulness. Nigerian children can benefit from this intersection of traditional knowledge and modern sustainability practices, leading to an enriched learning experience that respects both their heritage and the urgent need for environmental stewardship.

As Nigeria continues to face pressing challenges related to waste management, climate change and environmental sustainability, upcycling offers a cost-effective, practical, and culturally relevant solution. *By teaching children about the benefits of reuse, recycling and resourcefulness, schools can help shape a generation that is more environmentally conscious, creative and prepared to tackle the environmental challenges of the future.* The study also explores the significant potential of upcycling as an educational tool in Nigerian primary schools, examining its impact on environmental awareness, creativity and critical thinking development.

Through this work, we seek to argue that integrating upcycling activities into primary school curricula is a proactive strategy for not only addressing waste problems but also for fostering a culture of sustainability. By equipping children with the skills, knowledge, and mindset to reimagine waste as a valuable resource, Nigerian schools can play a pivotal role in shaping a sustainable future for the country.

Environmental Challenges in Nigeria

Nigeria, like many developing countries, is grappling with significant environmental challenges due to rapid urbanisation, poor waste management systems and industrial growth. According to recent studies, urbanisation has increased waste generation in Nigerian cities, contributing to an escalating waste crisis. The country produces millions of tons of waste annually, a large proportion of which ends up in landfills, streets and bodies of water. This improperly managed waste leads to various environmental issues such as pollution, flooding, and the spread of diseases (Ogundele & Ayodele, 2020).

In Nigerian cities like Lagos, Abuja, Port Harcourt, Benin City, etc., waste management infrastructure is often insufficient, leading to the accumulation of refuse in public spaces. Inadequate waste disposal systems result in the contamination of water sources, as waste is often dumped directly into rivers, leading to poor water quality and the spread of diseases like cholera and malaria. This highlights the urgent need for sustainable waste management practices and responsible consumption in Nigeria.

The country's rapid industrialisation and increased consumption of disposable goods have intensified environmental degradation. Improper disposal of non-biodegradable materials like

plastic bottles, bags, and packaging has further contributed to pollution. These materials take hundreds of years to decompose, causing long-term harm to ecosystems.

In this context, it becomes evident that environmental education, particularly at the primary school level, is crucial in addressing these environmental issues. By educating children about waste reduction, resource conservation and responsible consumption, we can create a generation of environmentally conscious citizens. Upcycling, as a sustainable practice, provides a hands-on solution for reducing waste and fostering a culture of sustainability.

Upcycling

Upcycling refers to the creative reuse of materials or products that would otherwise be discarded. Unlike recycling, which breaks down materials into their raw components for reuse, upcycling transforms waste into new products or art without significant alteration of the original material. This process has significant environmental benefits, particularly in waste reduction and resource conservation.

Upcycling is an effective way to teach children about sustainability, as it allows them to directly engage with materials they might typically throw away. By repurposing items like plastic bottles, cardboard, old fabrics and newspapers, pupils can make useful objects, such as toys, decorations or even functional tools. This hands-on learning approach offers pupils a tangible understanding of how recycling and waste reduction can be integrated into daily life.

Benefits of upcycling in primary education

1. Upcycling directly addresses waste accumulation, as it involves reusing materials instead of sending them to landfills or incinerators. By turning discarded materials into useful products, pupils can see firsthand how small efforts can contribute to larger environmental benefits.

2. Upcycling activities emphasize the finite nature of natural resources. Children learn that many materials, such as plastic, fabric and metal, are produced from non-renewable resources. Through upcycling, pupils understand the importance of minimising the extraction of new resources and reducing the consumption of single-use products.

3. As children engage in upcycling, they develop a sense of responsibility toward the planet. They learn that individual actions can contribute to reducing pollution and conserving natural resources.

4. Upcycling can also be culturally relevant in Nigerian schools. Teachers can incorporate local materials, such as woven baskets, palm fronds and discarded wood, into upcycling projects. These materials reflect the local culture and environment, making the lessons more relatable to the pupils (Eze & Ogu, 2021).

Through upcycling activities, children can understand the connections between the environment and their everyday lives. By engaging in these activities, they develop a deeper understanding of environmental sustainability and its practical application.

Creativity and Critical Thinking Development

Upcycling activities offer more than just environmental education; they also foster the development of creativity and critical thinking among pupils. The act of transforming discarded materials into new products requires problem-solving skills, imagination and the ability to think

outside the box. By repurposing materials, children explore their creative potential and discover innovative ways to use everyday objects.

Upcycling allows pupils to express their creativity by transforming mundane objects into art. For example, children can turn plastic bottles into vases, old newspapers into collage art or fabric scraps into fashionable accessories. These activities give pupils the opportunity to develop their artistic abilities and design skills (Nicolson, 2020). By experimenting with different materials and techniques, children gain confidence in their creative expression. Many upcycling activities are designed to be carried out in groups, encouraging collaborative learning. As students work together on upcycling projects, they share ideas, negotiate designs, and combine their skills to produce a final product. This process fosters teamwork, communication, and a sense of community, which are essential life skills (Osborne, 2019).

Upcycling also encourages pupils to think critically about the objects around them. By asking themselves how everyday materials can be reused or repurposed, pupils develop problem-solving skills. This type of thinking challenges conventional views on waste and value, encouraging children to question the disposability of products and consider alternative uses for items (Nicolson, 2020).

In addition to creativity, upcycling encourages pupils to approach problems in new ways, fostering a mindset that values resourcefulness and sustainability.

Integrating Upcycling into the Nigerian School Curriculum

Integrating upcycling into the Nigerian primary school curriculum would require collaboration between educators, policymakers and local communities. Schools can organise upcycling

workshops, competitions and projects that engage students in creating art and functional objects from discarded materials. These activities can be incorporated into existing subjects such as Art, Mathematics, English studies, Basic science and technology, Social studies and Civic education ensuring that upcycling is not only an extracurricular activity but an integral part of the educational experience. Nigerian educational authorities should consider incorporating upcycling and sustainability into the national primary school curriculum. This would ensure that every child, regardless of location or socioeconomic background, receives consistent and comprehensive education on environmental issues. Government-backed initiatives and frameworks can guide schools in creating standardised programmes for sustainability education. Schools can start by introducing simple upcycling projects that do not require significant investment. For example, students can create decorative items from bottle caps, turn old t-shirts into bags, or repurpose cardboard boxes into storage units. Such projects promote creativity while fostering sustainable practices (Eze & Ogu, 2021). Schools can collaborate with local businesses and NGOs to source materials for upcycling projects. Partnerships with waste management organisations can help schools access recyclable materials, while collaborations with local artisans can introduce pupils to traditional upcycling practices that use locally available resources.

Challenges to Upcycling Implementation in Nigerian Schools

Despite the potential benefits, there are several challenges to implementing upcycling activities in Nigerian schools. These include:

1. Teachers and school administrators may not be aware of the educational potential of upcycling. Without proper training, they may be hesitant to integrate upcycling into the curriculum.

2. Many schools in Nigeria face financial constraints that limit access to basic educational materials. Without adequate funding, schools may struggle to implement upcycling programmes that require certain tools or materials.

3. In Nigeria, there is a lack of proper waste collection and sorting infrastructure, which makes sourcing materials for upcycling difficult. In rural and underfunded urban schools, the availability of suitable discarded materials may be limited, affecting the feasibility of upcycling projects.

4. There may also be cultural perceptions around waste and the reuse of materials. In some Nigerian communities, waste is often seen as undesirable and upcycling may not immediately resonate as an educational tool. Changing these perceptions requires concerted efforts from educators, community leaders and government stakeholders to emphasize the value of reusing and reimagining materials as resources for creativity.

Conclusion

Upcycling presents a powerful tool for enhancing environmental awareness and nurturing creativity among Nigerian primary school pupils. By reimagining waste as a valuable resource, upcycling not only addresses pressing environmental challenges like waste accumulation and pollution but also fosters a sense of responsibility and creativity in pupils.

Incorporating upcycling into the school curriculum can help children develop critical life skills, including problem-solving, teamwork, and innovative thinking. As Nigeria faces mounting environmental issues, integrating upcycling in primary schools offers a proactive, low-cost, and culturally relevant solution that can foster long-term environmental sustainability. For upcycling to become a mainstream educational tool, there must be concerted efforts from government,

educators, and communities to overcome challenges such as limited resources, inconsistent waste management, and cultural perceptions. Through partnerships, teacher training, and policy integration, upcycling can transform Nigerian schools into hubs of environmental education, inspiring the next generation to lead sustainable lives and contribute to a greener future for Nigeria.

Suggestions

1. There should be specialised training and sensitisation programmes to equip educators with the knowledge and skills needed to lead upcycling initiatives. Teachers should be made aware of the environmental impact of waste and the benefits of teaching children to reuse materials creatively. Workshops, seminars, and online resources can be developed to ensure that teachers understand how to incorporate upcycling into their lessons.

2. Primary schools in Nigeria should collaborate with local businesses, environmental NGOs and government agencies to obtain resources for upcycling projects. Local artisans and craftsmen can be brought in as mentors, sharing their knowledge of traditional crafts and upcycling practices.

3. The Nigerian government should consider formally integrating upcycling and sustainability into the national curriculum for primary education. By introducing environmental education as a core component of the curriculum, students across the country will have access to standardised instruction on waste reduction and resource conservation.

4. The Nigerian government should allocate resources to schools for environmental education programmes, particularly those that involve hands-on activities like upcycling. Funding can be used to provide schools with the necessary tools, materials and equipment to carry out these activities. Government should also incentivise schools that successfully implement upcycling

programmes through grants, awards or recognition, ensuring that more schools across the country adopt these initiatives.

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