

Nature Corner: Key for Promoting the Teaching of Science in Primary Schools

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Abstract

There are many instructional designs that can aid in bringing science closer to primary school pupils to arouse and sustain their interest, and to promote learning. One of such is the nature corner where locally-sourced materials and real objects from the environment are gathered and kept. These materials comprise mainly, teachers' and pupils' collections of objects from their environments. When properly utilized in the classroom by the teacher, Nature Corner can be a very effective means for promoting the teaching of science concepts at the primary school. As important as Nature Corner is, the appearance of modern technology has led to lots of changes in the learning resources scenery, such that it is possible to consider it outdated and ineffective. Thus, this paper sought to emphasize the promotion of science learning through nature corner, elucidate the need for nature corner in primary school classrooms, and suggest measures for effective use of nature corner in primary schools.

Keywords: nature, teaching, science, primary, school

Introduction

In recent times, discussions on effective teaching and learning have been more on the use of modern learning resources such as computers, the internet, multimedia, and modern laboratories, among others. This is so because such modern resources can facilitate learning and open new frontiers of knowledge for global development and welfare. What, however, is not necessary is the correctly expressed fear that “with so much change in the learning resources landscape, there is a tendency to forget, discard, or even neglect older

learning resources as outdated, out modeled, inefficient and inadequate” (Hannon, 2022 p. 35). Such a tendency, according to Olibie et al. (2015) would be a waste of a wealth of valid resources because most of the older resources have been proven to be very effective and will remain so over time.

One of such older resources that have been a prevalent feature of most primary schools in Nigeria is what is commonly referred to as “Nature Corner,” where local authentic materials and real objects from the environment are kept. Such authentic materials comprise mainly of teachers’ and pupils’ collections of objects in their environments such as grains, shells, cans, bottles, skins, among others (Olibie et al., 2015). It could also comprise of charts, graphs, maps, magnets, building blocks, insects, feathers, mirrors, flowers, little bird in a cage for children to take care of, potted plants, torchlight, measuring scales, pebbles, rulers, and others. When properly utilized in the classroom by the teacher, Nature Corner can be a very effective means for promoting the teaching of science concepts at the primary school level, which is the foundation stage in the Nigerian educational system.

The goal of science is to understand the natural world through a process known as scientific inquiry. Scientific knowledge, according to Worth (2010), helps humans explain the world around them, such as why water evaporates and plants grow in particular locations, what causes disease, and how electricity works. Scientific knowledge also helps humans predict what might happen in the future, either to the environment or to humanity. It helps in solving problems such as the spread of diseases and guides technological development to serve human needs and interests.

The need to focus on science in primary school cannot be overemphasized. According to Cornelius-Ukpepi and Enuokoha (2013), the proper development of science at the primary school level is the key to the successful development of science at other levels of education. That is why the Nigerian National Policy on Education (FRN, 2004) rightly enumerated some of the objectives of science learning at the primary school level to include the laying of a sound basis for scientific and reflective thinking; developing in the child the ability to adapt to his changing environment, and giving the child opportunities for developing manipulative skills that will enable him to function effectively in the society within the limit of his capacity. The implication of this, according to Cornelius-Ukpepi and Enuokoha (2013), is that after primary education, pupils are expected to be properly exposed to the process of scientific inquiry to enable them to function effectively in society. This implication, however, seems to be a mirage in the Nigerian primary education system. This

is because of the challenges faced by both teachers and pupils in the understanding of science concepts in terms of teaching and learning.

One of the difficult tasks that teachers face is creating lessons that will cause learning to take place and also sustain learners' interests. Teachers will be more successful in engaging pupils when they understand and appreciate the materials. Cornelius-Ukpepi and Erukoha (2013), in their study, found that pupils' low academic performance in both internal and external examinations has been a matter of concern for parents, teachers, administrators, and society as a whole. This low performance, according to the authors, may be due to a lack of understanding of scientific concepts or the difficult nature of the concepts at this level of education. Edu and Edu (2013) undertook a study of the perception of difficult primary science concepts by 483 teachers and 883 pupils randomly chosen from 38 primary schools in Ikom Education Zone of Cross River State in Nigeria. The researchers used a questionnaire to ascertain their perception of the difficulty of concepts in Primary Science and found that both teachers and pupils have difficulty understanding most science concepts. There is therefore need for more strategies and innovative measures to be established for the effective teaching and learning of science, if pupils must be fully indulged in this all-important field of study.

To solve the perennial problem and promote the teaching and learning of science concepts in primary school, it is the place of teachers to create a scientific learning environment in the classroom. This scientific environment can be in the form of making a wonder table, getting hands-on activities, and surrounding the class with science. Edu and Edu (2013) suggested that the teacher should get the pupils a science resource to unlock the science in them. One of such science teaching resource that can create a scientific learning environment is the "Nature Corner". Using Nature Corner in the classroom to promote the teaching and learning of science concepts is based on the understanding and recognition of the power of children's early thinking and learning. As maintained by Worth (2010), research and practice suggest that children have a much greater potential to learn than previously thought, and therefore, early settings at the primary level of education should provide richer and more challenging environments for learning. In these environments, guided by skillful teachers, children's experiences in the early years can have a significant impact on their later learning. In addition, science may be a particularly important domain in early childhood, serving not only to build a basis for future scientific understanding but also, to build important skills and attitudes for learning.

Promoting science learning in the classroom through Nature Corner

Learning about nature and science helps children expand their vocabulary and develop a broader understanding of basic science concepts. The increase in environmental concerns makes it even more important for children to study nature and science which is a must-have for primary schools and education environments. Including a nature corner in classroom will give children the opportunities to explore the world around them through hands-on learning and will help nurture children's interest and concern for the environment then as children and later as adults.

To use nature corner for promoting science learning, the teacher has to first make the corner in the class a very busy place where pupils can observe, compare, and ask questions. Children are naturally born scientists. They are curious and eager to explore the world and everything in it (Pocket of Preschool, 2019). Consequently, teachers should take on the duty of nurturing learners' scientific spirit and helping them form questions, and investigations, and collect data by making nature corners amazing, to enhance their experiences. This, teachers can do, by rotating items based on the season in addition to the permanent items that make up the nature corner. The selection of items for the nature corner can also be based on the concept of science that is to be taught at any given time. For instance, while teaching the topic, "The Germination of Seeds", containers with little perforations at the base to avoid water logging, loamy soil, seeds for planting such as beans, maize, groundnut, okro seeds, and water should form a prominent part of the nature corner for the duration. Pupils are then guided to fill the containers with loamy soil, plant the seeds, and water them accordingly. The containers are placed near a source of light (sun). Pupils are then encouraged to investigate, ask questions, and make their own conclusions as they observe the seeds germinate and grow into a plant over time.

Another example of the usage of nature corner for teaching science on the topic, "living and non-living things," is considered. The nature corner can contain living and non-living things brought by the pupils such as birds, plants, insects, stones, magnets, iron, and books, among others. The teacher can also have a chart displaying living and non-living things for the pupils to learn from. In another example, the topic could be "Magnetic force" where magnets and things that are attracted to magnets form the items in the nature corner for the week. This will enable the pupils to personally explore and try various ideas, observe the results, ask new questions, take note of changes occurring in the experiments, and then draw conclusions (Pocket of Preschool, 2019).



Figure 1: A sample of Nature Corner
Source: Bariga (n.d.)

Need for nature corners in a primary science classroom

The use of nature corner for the teaching of primary science has a number of benefits. These are:

1. When teachers make effective use of authentic indigenous materials as found in nature corners, pupils become highly motivated which results in improved class attendance and more completed projects and assignments (Calderin, 1994; Olibie et al., 2015). In addition, pupils also become actively involved in their learning, encouraging comprehension rather than mere memorization of facts (Elinvoki, 1995, cited in Olibie et al., 2015).
2. Nature Corner provides children the opportunity to work individually and in groups, to investigate and solve problems in science.
3. It is a place that attracts attention and a place for experiments and observations in science concepts, which makes science education easy and interesting.
4. It increases children's curiosity in science and improves thinking skills.
5. It reinforces facts, presents pupils with real life situations in which they learn about facts and ways of manipulating facts.

Recommendations for effective establishment and use of nature corner for science teaching

According to Alabay (2009), in setting up a nature corner in the classroom, the following factors should be considered:

a) Location:

The nature corner should be located near a bright and well-ventilated place in the classroom. Sunlight Inside (2017) opined that exposing children to natural light profoundly impacts their health wellness, and academic performance. Exposure to bright blue light during the day helps to boost the mood, alertness, concentration, and energy levels of children. In the same vein, fresh air intake is important to ensure the well-being and high performance of the pupils. Studies have also shown that an increase in ventilation rate is associated with a lower risk of respiratory illness (Gao et al., 2014). A well-ventilated classroom eliminates negative effects on children's health, absenteeism, and poor performance in school work. This assertion is confirmed in an experiment carried out by Wargocki and Wyon (2007) on classroom air temperature and air quality. The result showed that children's performance in school work would be greatly improved if classroom received more outdoor air per person per second, and if classrooms did not become as warm in summertime as they were. The experiment also proved that negative effect of heat and poor air quality constitutes a very serious handicap for children who are trying to learn something by performing schoolwork. Thus, Nature Corner should be well located so as to be able to derive the full benefits inherent in its use.

b) Placement position

Nature corner should be suitable to the children's height and removed from dangerous places like electric sockets, cables and so on. Placing the nature corner suitable to the children's height will enable the children work well when using the corner without staining themselves. Also, safety is a key part of learning, with attention paid to potential hazard which could become dangerous in any classroom when not properly handled. Therefore, while setting up a nature corner, the teachers need to be extra vigilant to ensure the safety of the pupils. According to McCoy (2018), hazards can be associated to different classroom elements or furniture and a simple cord can become a trip hazard. The author further mentioned that simple everyday tools like pencils and scissors, a science corner full of materials could also pose hazards to pupils because, they could mistakenly spill chemicals on their skins or ingest them. The author then suggested a proper supervision by the teacher and periodic inspection by safety inspectors, joined by a school administrator to identify and analyze classrooms for obvious and hidden dangers. And also, installation of eye wash stations in science corners and keeping electrical cords and other dangerous items out of reach of pupils are necessary precautionary measures.

c) **Materials needed**

The materials/items for the nature corner should be according to children's age and developmental level which should provoke curiosity. This will enable the children to better understand the science concepts being taught and in line with Piaget (1936) theory of the biological maturation stage. Piaget calls this stage the notion of readiness. Readiness concerns when certain information or concepts should be taught. It is important that children are taught certain concepts only when they have mature to the appropriate stage of cognitive development.

When materials/items for setting up of nature corner do not provoke the children's curiosity, then there will be no willingness to learn due to lack of interest. This, according to Bruner (1973), is a principle of learning in which instructions must be concerned with the experiences and context that make the students willing and able to learn science.

Setting up a nature corner

A nature corner should be made an integral part of the primary school classroom. However, setting one up and choosing the best materials for the corner can be very tricky especially if there is limited space like the classrooms that are in Nigeria, with outrageously large class sizes. To set up a nature corner in the classroom, Kaplan Early Learning Company (2019) gave four (4) steps that detailed how to set up a nature centre that is just right for the classroom. The four steps are:

1. Finalize the size and location of the nature and science corner
2. Choose furniture that works well in the allocated space.
3. Opt for storage options that help keep items and materials organized.
4. Select a variety of science tools and materials to facilitate learning.

1. Finalize the size and location of the nature and science corner

The first step in setting up a nature corner is to decide on its size and location in the classroom. This decision should be based on the overall size of the room, the number of children in the class, and how many children the teacher wants to use the corner at one time. Space for 5-6 children is a good goal to keep in mind as the nature corner. The teacher should try to locate the nature corner near a window. Locating the corner near a window means children have natural light to help them grow a variety of plants indoors. It also allows for plenty of opportunities to observe nature, weather and seasonal changes.

2. Choose furniture that works well in the allocated space

Two or three tables with several chairs will be needed in the nature corner to give children an appropriate workspace. The teacher may also want to consider adding a light table to

the space to help children learn about energy and light. Shelving units and other furniture options will help define the space and keep everything organized.

3. Storage options that help keep items and materials organized

Storage containers are a must for the nature and science corner. These storage containers can help a teacher organize science materials and keep science collections together. Labelled storage containers are also a great way to encourage pupils to help keep the area neat and organized. The teacher may want to keep more expensive science materials in a locked storage cabinet or stored out of pupil's reach.

4. Select a variety of science tools and materials to facilitate learning

The nature and science corner should contain a variety of science tools, materials and collections for pupils to explore. These tools can be things like rocks, magnets, microscope, magnifying glass, mirror, measuring scales, seeds, feathers, insects and others. There are numerous materials for a science teacher to choose from. So, the materials chosen for the corner will depend on the science concepts to be taught and the overall vision for the nature corner.



Article from scoop.it

Nature Discovery Provocations | Inspiring Play Environments



Saved from

progressiveearlychildhoodeducation.blogspot.com

Science investigation table of authentic objects collected on nature walks or vacation trips. Important to have microscope handy!



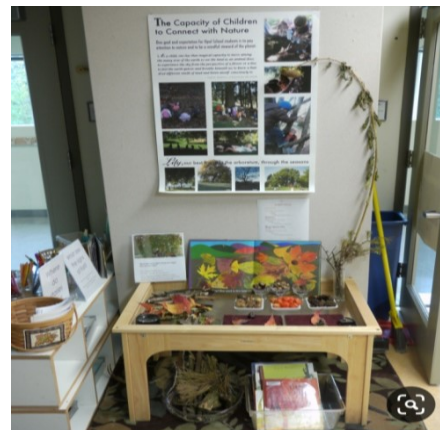
A nature corner showing rainbow colours



A nature corner showing different types of birds on a tree



A nature corner showing different types of farm animals



A nature corner showing different plants in nature

Figure 2: Some examples of Nature Corners

Source: Bariga (n.d)

Conclusion

Giving answers to children’s questions about nature and science helps them learn more about the scientific processes through hands-on activities. It will help them to develop critical thinking skills and also encourage them to become lifelong advocates for the environment. Having a nature corner in the primary school classrooms can also make room for the understanding of scientific concepts, help children build positive relationship with science and increase their chance of entering science related careers later in life.

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