My Dragon Fruit Skin, Color is Seen!

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Abstract. This paper demonstrated a simple colourful activity that unlocked the child's curiosity on how a collared paper is made and where its colour came from. Since the child had already a concept of colors during her preschool years, performing a simple activity or experiment in obtaining natural pigment from plant parts gave the child additional concept about colors. It focused on the ability of the dragon fruit skin extract to act as a natural color to a paper, thus an improvised colored paper or filter paper was made. To make the natural color, the researchers (mom/teacher and child) collected and extracted by boiling the dragon fruit skin. The extracted solution was cooled and kept on a refrigerator for a while. The upcoming kid innovator (child) as assisted by mother-teacher then improvised a colored paper by dipping the paper into the extract of dragon fruit skin. Two types of paper were used: a bond paper and a filter paper. Pieces of clean bond paper and filter paper were soaked into the extract solution, air dried, and set aside for comparison. It was observed by the child that an ordinary bond paper did not absorbed much of the color of the dragon fruit skin extract; while the filter paper absorbed the color of the extract. Though the two types of paper was dyed with color purple or pink, it was concluded by the child that filter paper is better than an ordinary paper. The colored papers out of dragon fruit skin extract were kept for art purposes and science presentation. It is further recommended by the mother-teacher to conduct more study, activity or experiment on the natural color produced by the dragon fruit.

1. Introduction

"A mother is a teacher, a teacher is a mother." Her ability to do dual responsibilities, not to mention other functions as a mother is really astonishing. Parents nowadays, either the father or mother, are so busy with their jobs just to earn for a living. Despite this situation, some parents still find precious time for their children to support their needs. To most parents, it is giving the best education a child should receive. Carl Sagan once said *"except for children who don't know enough not to ask the important questions, few of us spend time wondering why nature the way it is."* Younger learners are always asking questions. They hunger to make discoveries, to find answers that will help them make meaning of the world around them. They ask questions not to annoy or interrupt, but to pursue their inherent drive to learn. Much like scientists, they develop hypotheses and test them, incorporating their findings and often retesting and modifying their theories over time – the foundations of logical reasoning. Children love to develop deep expertise - naming obscure dinosaurs or any animals and objects, explaining the workings of a toy, or playing "teacher' with precision of gesture and speech.

2. Literature Review

Guiding this relentless curiosity in the direction of students' academic growth without squelching it is a primary teacher's greatest challenge. By joining students in the inquiry process and creating rich opportunities for discovery, for building deep expertise, and for sharing that new knowledge, teachers are able to harness the "engine" of children's natural learning predispositions to power their success in the classroom (Source: ELED – Characteristics of Primary Learners, 2014).

When curiosity strikes, learning begins. Children are curious innately, determined to learn and comprehend everything in the environment. As they opened their eyes, the first person who got their attention was of course the significant figure in their lives. Amazingly, parents are the first teacher that serves as a doorway into the world of love and learning. Knowing that the brain is designed to pick up, capitalizing on children's curiosity will fuel emotional, social, intellectual, physical and ethical development.

A curious child who stays curious continues to explore and discover. Upon discovery he finds pleasure. When he experiences the joy of discovery, he re-explore. Pleasure leads to repetition until mastery of learning occurs. When there is mastery, confidence is developed. Thus, confidence increases a willingness to act on curiosity – to explore, discover and learn. This explains that there is a positive cycle of learning fueled by curiosity and the pleasure that comes from discovery and mastery (Perry, M.D.,PhD., 2001).

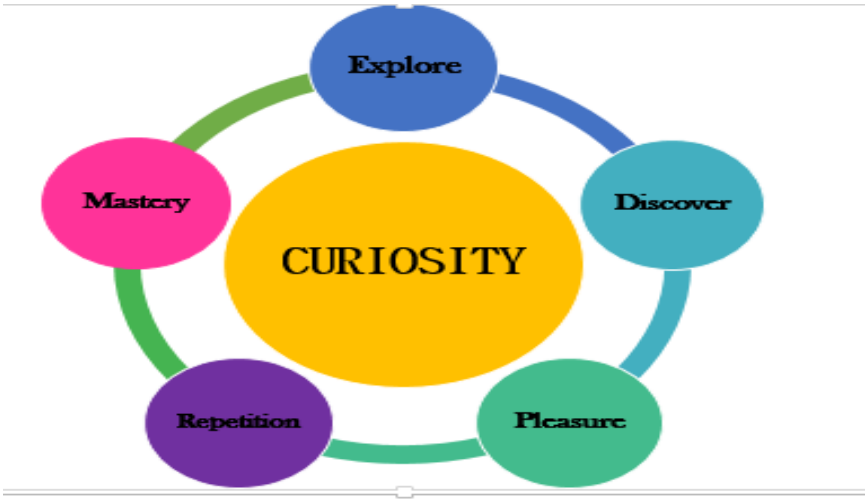


Figure 1. Schematic Diagram for Learning Cycle

As stated in the Department of Education Curriculum Guide (August 2016) for K to 12 Basic Education Curriculum, the following grade level standards should be met after completing certain grade level. In this paper, the researcher (teacher-mother), had used for its reference the level standards of kindergarten and grade 1 level since the (upcoming kid innovator) had finished already preschool level and is in grade 1 at present.

In preschool, the learners will demonstrate an emerging understanding of the parts of their body and their general functions; plants, animals and varied materials in their environment and their observable characteristics; general weather conditions and how these influence what they wear; and other things in their environment. Understanding of their bodies and what is around them is acquired through exploration, questioning, and careful observation as they infer patterns, similarities, and differences that will allow them to make sound conclusions. At the end of Grade 1, learners will use their senses to locate and describe the external parts of their body; to identify, external parts of animals and plants; to tell the shape, colour, texture, taste, and size

of things around them; to describe similarities and differences given two objects; to differentiate sounds produced by animals, vehicles cars, and musical instruments; to illustrate how things move; to, describe the weather and what to do in different situations; to use appropriate terms or vocabulary to describe these features; to collect, sort, count, draw, take things apart, or make something out of the things; to practice healthy habits (e.g., washing hands properly, choosing nutritious food) and safety measures (e.g., helping to clean or pack away toys, asking questions and giving simple answers/ descriptions to probing questions).

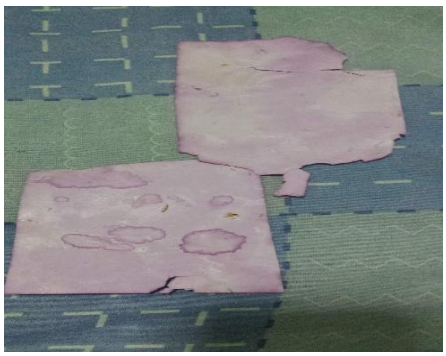
3. Methodology

The teacher-mother (researcher) had utilized the inquiry-based learning approach – constructivist, inquiry-based, reflective, and integrative way of learning (IRR of K-12 Program: Rule II: Curriculum Section 10.2 e). The activity was intended to a single learner only and not to a group of learners, to be demonstrated to Wyeth Search for Upcoming Kid Innovator 2017. The search encouraged the teacher-parent-child relationship wherein the teacher and parent played an important role for his/her student/child to enhance his/her scientific skills in processing data like observation, gathering data, analysis, arriving at hypotheses, re-gathering and re-analyse data, arriving at conclusions, and making recommendations. Activity made for the Category: Upcoming Kid Innovator provided simple scientific explanations on - "Where does colour came from?", and "How a coloured paper was made?" Originated from child's inquiry, the teacher-mother designed an activity engaged in open-ended, learner-centred, hands-on activity. The teacher-mother planned and designed the paper by stating the problem, objective, and significance of the experiment followed by the guided procedural activity that was formulated and adapted. The child's performance was documented through pictures, video, and structured guide questions (pen and paper) with tabulated data that facilitated the science process skills. No statistical treatment or analysis employed in this activity. Though no required format indicated for the search contest, the teacher-mother designed the paper and activity in a way that it was presented scientifically. This simple activity aimed to answer the child's inquiry on where a particular color pigment come from and how it can be obtained. Specifically, the purpose of the activity to the child is for her to discover that a color could be obtained from plant parts like leaves, roots, stems, leaves, flowers, and fruits. In this activity, a dragon fruit serve as an example; and determine whether dragon fruit skin extract could be a possible component in making a colored paper particularly pink or purple to red pink color paper. The child's positive attitudes allowed her to develop an understanding of and appreciation for the scientific method or skills like following direction, instruction, observation, measurement, recording **b.**simple data, comparing and communication; work cooperatively with mommy or teacher-adviser and ensure safety during the activity; handle all equipment and water carefully and responsibly; and to dispose waste responsibly (e.g. pour waste water or extracted skin of fruit onto plants or garden beds instead of down the sink). Benefits of the activity give ways for a child to learn to taste and eat unfamiliar fruit. Dragon fruit contains nutrients like vitamin C, B, and phytonutrients. The dragon fruit peelings are classified inedible like other fruit peelings, and are thrown away into the garbage after its flesh have been taken for food consumption. Waste management starts at home. Fruit peelings can be used in many ways. In this activity, two procedures were done. The first part was obtaining the color from the dragon fruit skin, and the second part was making of the colored paper. **Procedure in Preparing Dragon Fruit Extract Solution: a.** Collect the dragon fruit skin or peelings **b.** Cut into small pieces and place in a casserole **c.** Add about 1 cup or 200 millilter of water to the peel depending on the amount of the dragon fruit skin used **d.** Boil for 5 minutes; stir from time to time **e.** Transfer the mixture into a bottle while it is still hot. There is no need to filter. Just remove the solid portion. The mixture may change if left in open air for more than 5 minutes. **Preparing**

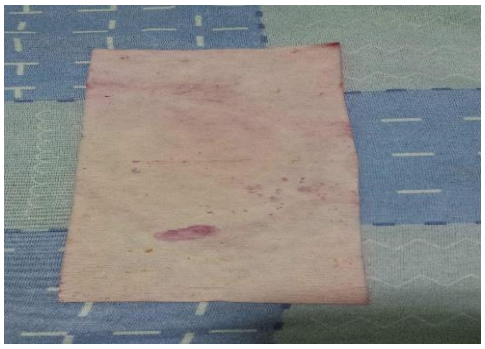
a Colored Paper includes the following: **a.** Pour the dragon fruit extract solution prepared in the first part of the activity into a shallow plastic or ceramic container **b.** Cover the entire filter or bond paper by dipping it with the dragon fruit skin extract solution **c.** Air dry for about 5 minutes **d.** Repeat procedures 1 and 2 three times until the color of the paper becomes dark **e.** Continue drying the paper **f.** Keep it in between the pages of the book so that it can be flatten or pressed for a while **g.** Keep it inside an envelope for art purposes and project presentation.

4. Results and Discussion

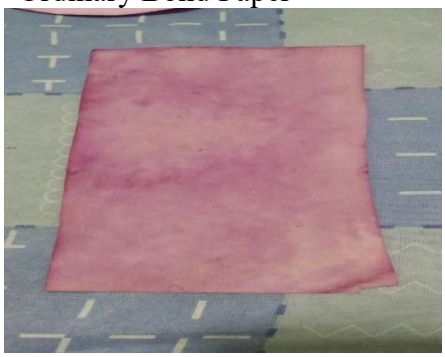
The experiment done was recorded and documented through observation checklist, video and photo.



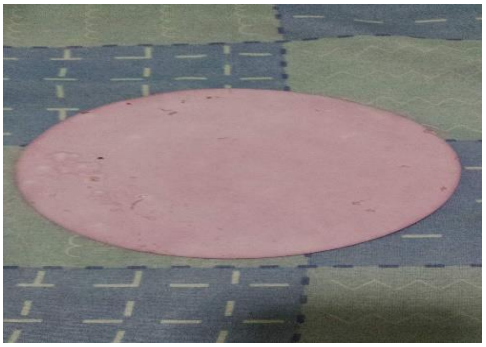
A. Ordinary Bond Paper



B. Filter Paper (red extract)



C. Filter Paper (purple-pink extract)



D. Filter Paper (purple-pink extract)

The mother-teacher and the child had a conversation of the outcome of the experiment after. The child was happy of the outcome of the activity especially when the papers used were dyed with color and felt sorry for the paper that had ripped. The mother-teacher explained to the child that it was fine for her to realize that there was a reason for it. Observation using senses happened before, during and after the experiment. Simple skills in science was performed by the child aside from observation. The child had measured water. Manipulative skills like cutting, abet boiling procedure, dipping or soaking, and squeezing as a part of extraction was done by the child. Comparing variables (between the types of papers used) through guided questions was evident. Lastly, the child made a simple conclusion based on the child's documented checklist or answer sheet. Since the child had just entered Grade 1 level and aged six years old, the experiment performed was just like a play between a mother and daughter cooking or working in a kitchen. The experiment made by the child and mother-teacher was worth engaging and enlightening.

5. Conclusion and Recommendations

Based from the child's observation and simple data gathered, she concluded that dragon fruit skin extract solution produced a color that could be used as a color component in making a

colored paper. The upcoming kid innovator also concluded that filter paper is a better material than ordinary bond paper because the filter paper absorbs more the dragon fruit extract solution easily. The parent (mom)-teacher further suggested or recommended that when it is completely dry, cut the paper into small square or rectangular pieces to make an indicator paper. Keep it in a covered bottle. Label the bottle properly (with name and date of preparation). If the natural red color obtained from the dragon fruit peelings/skin could be used as a natural indicator for acids and bases, then a continuation of the study should be done. Dragon fruit skin extract or solution produces a bright red to purple pinkish color. The parent/teacher would like to try, if this could be used as natural food coloring in the preparation of food.

Reflections and Insights. The following ideas should be considered when a mother-teacher would like to ignite the child's curiosity: **a.** an adult's close by involvement and enthusiastic sharing and delightful response is very important to the child's discovery. **b.** the best skill that will help the child satisfy his curiosity is through exploration and an engaging simple, hands-on experiment. **c.** a mother-teacher (teacher-mother) has a freedom to choose and apply other basic strategies that will nourish child's curiosity and that depends on the nature of inquisitiveness considering the age and the grade level of the child and other factors that may arise. **d.** Quality time to the child counts.

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