

**One Day Orientation Program
On
Plant Morphology, Plant Anatomy, Primary Health Care and Biodiversity
Conservation for the students of Government School, Bangalore**

23rd February 2018



**Organized by
TransDisciplinary University, Bangalore (TDU)
(Supported by Infosys Foundation, Bangalore)
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One Day Orientation Program for School Students of Government School, Kodigehalli

Introduction

Cities have been witnessing an erratic urbanization, which has led to rapid diminishing of green cover. As a result of this, our cities are experiencing the incidences of increase in temperature, reduction in air quality, water scarcity, urban floods, etc. Hence, there is an urgent need to maintain an ecological balance, a truth not sufficiently felt and understood in the sphere of urbanist advocacy. Cities developed in harmony with beauty and function of nature would certainly help building a healthy urban ecosystem.

In this context, it has become important that young minds have to be informed more about various biotic components in the urban ecosystem. This could happen through simply taking them close to nature and making them understand its importance. It would bring forth a future generation with environmental consciousness, which can build a sustainable urban environment.

The Institute of TransDisciplinary Health Sciences and Technology (TDU) with the support of Infosys Foundation, Bangalore has developed a unique one-day orientation program for the students pursuing their secondary education, to give them an opportunity to learn the basics of plant taxonomy, anatomy, primary health care and biodiversity conservation. This program has been designed in line with their school curriculum. It is expected that this program will broaden their understanding about the nature specifically plants and help them develop their interest in the urban nature conservation.

This could be a precursor to any environment education program that government likes to introduce at the school level.

Introductory Session

Dr. M. Abdul Kareem, Associate Professor and Course Coordinator gave an overview on the TDU and Ms. Amrita. G gave a brief introduction about the Program structure. Around 45 students from class 9th Standard participated in the program accompanied by two teachers.



Session: 1: Primary Health Care

Dr. Subramanya Kumar, Assistant Professor defined primary health care and explained about the importance being healthy. He emphasized on the intake of nutritious food that can keep mind and body strong and fit. He explained about the pyramid that shows the quantity of food to be taken like green vegetables in more and sugar in less quantity. He also showed some important



remedies that are easily prepared at home to cure common diseases such as cold, fever, cough, indigestion, headache etc. few examples like usage of dry skin of pomegranate, stems of *Tinospora cordifolia*, leaves of *Centella asiatica*, *Ocimum tenuiflorum* etc were also mentioned. He demonstrated the preparation of face pack with the turmeric and *Aloe vera* which is used to cure acne, fungal infections etc. Students were enthusiastic to interact and ask more questions related to remedies to cure common health problems.

Session: 2: Anatomy and Herbarium

Dr. Noorunnissa Begum gave hands on training on plant anatomy. She demonstrated the preparation of anatomy slides by taking sections of a monocot (*Peniciatum* species) and dicot stem (*Tinospora cordifolia*) and staining technique. Students were asked to take the sections and observe the specimen through the microscope and examine the xylem, phloem, epidermis, and cortex. The students were then asked to form a group of five each and prepare similar slides. They were also shown herbarium sheets and its techniques to prepare them. Hands on experience in preparing the slides will



be useful for them to differentiate between monocot and dicot plants for future studies and also herbarium sheets can give them idea about collecting plants with all necessary information and preserve it for identification.



Session: 3: Plant Morphology

Students were taken to ethno medicinal garden which comprises of over 1500 species of medicinal plants, and the nursery has 450 species with green house and mist chambers for propagation and shade houses with misting facility for special indoor plants. Ms. Amrita. G, Research Fellow, TDU explained about each characteristics of plants such as structure and shape of leaves, size of fruits, leave patterns, uses of medicinal plants. They were taken to nursery garden where they could see various medicinal plants along with their uses. Students were shown various medicinal plants such as *Centella asiatica*, *Nepenthes khasiana*, *Adhatoda zeylanica*, *Cissus quadrangularis* etc. She also explained the process of preparing vermicomposting and importance of gardening.



Session: 4: Biodiversity Conservation

Mr. Santosh, CEE, Bangalore conducted activity aimed to sensitize students on the objects (plants, rocks, leaves, flowers etc.) that are around us. Hands on touch with these natural objects with eyes closed help an individual to relate and understand the key features of the objects around us. Pairing with partners in the activity gives an understanding among the students that nature protection is a team work rather than individual work. This activity helps in knowing natural objects through five senses, team work and cooperation in nature protection, enhancement of skills in identification of natural objects through touch and smell and also nature learning through fun for the students.



The program was culminated with the feedback of the students and distribution of certificates to the students by Principal of Government School Kodigehalli, Mr. Chetan, Assistant Professor, TDU, Mr. Santosh, CEE, Bangalore and Dr. Abdul Kareem, TDU Bangalore.



Learnings:

It was a general perception among students that only a few plants are medicinal. However, they found that most of the plants have medicinal value after undergoing this orientation program. The practical sessions on anatomy were very useful particularly for those students who like to pursue a career in life sciences. A basic understanding of uses of medicinal plants for primary health care was also notable. A fun activity on making nest also thought some creativity skills and importance of nature to protect the habitat of the flora and fauna. Exploring the garden thought wide range flora in the country and its key characteristics and features.

Feedback:

Students were asked to fill up a questionnaire to analyses the flow of the program, its content and also to understand as to how far the students were able to graph the subject. It will also enable the organizers to get the vibe of students and make necessary corrections. Students expressed their feelings of attending such program conducted for the students of government school. It is great exposure to them as they are exposed to various fields such as plant identification, anatomy home remedies, understanding the importance of conservation through activity. Students liked all the session conducted for a day. They were very happy to come to campus and explore the nature and see many plants and understand the importance associated with it. Following graph depicts the feedback obtained from the participant in each batch.

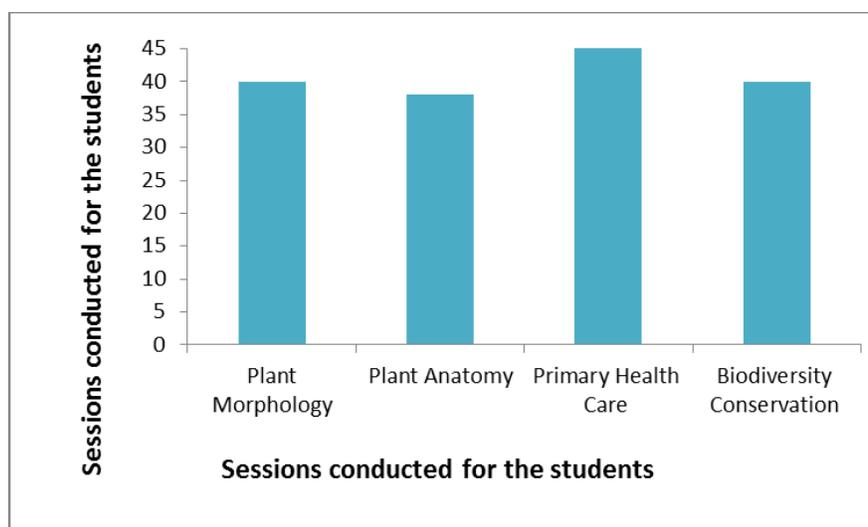


Fig. No.1: Graph depicting the number of students liked the program

List of Faculty:

1. Dr. M. Abdul Kareem, Associate Professor and Course co-ordinator, TDU
2. Dr. Subramanya Kumar, Assistant Professor, TDU
3. Ms. Noorunninsa Begum, Associate Professor, TDU
4. Mr. Santosh R. Sutar, Regional Director, CEE, Bangalore
5. Ms. Nandini Dholepat, Consultant, TDU
6. Ms. Anu V., Senior Research Fellow, TDU
7. Ms. Amrita G., Research Fellow, TDU

List of Participants:

9th Standard Students- 23rd February 2018

Bhagyashree	Radha
Chitra	Sumathi
Aruna	Akhil. A
Anitha	Lalitha. G
Lalitha	Shakuntala
Lakshmi	Yamini
Ganga	Sahana
Sukanya	Mamatha
Muskan	Sharadha
Kavya	Gayathri
Manasa	Rakshit. M
Suvarna	Ruthish
Rakshita	Simhadri
Pallavi	Anil
Asha	Shanthi

Apoorva	Abhishek
Shalini	Manjunath
Shwetha	Harish
Tejaswini	Devraj
Basamma	Malikarjun
Lakshmivamshi	Harshit
Upendra	Santosh

Program Schedule:

Time	Topic and Objective	Resource Person	Venue
10.15- 10.30.AM	Introduction to the program	Dr. M. Abdul Kareem Associate Professor Ms. Amrita G. Research Fellow	Training Hall Patanjali Block
10.30 – 11.30AM	Plant Anatomy and Herbarium	Dr. Noorunnissa Begum Associate Professor	Herbarium (Vagbhata Block)
11.30 – 12.30 AM	Exploring the University through identification and morphology of plants	Ms. Nandini. D Consultant	Field Field
12.30 -1.00 PM	LUNCH		
1.00 – 2.00PM	Primary Health Care	Dr. Subramanya Kumar Assistant Professor	Training Hall Patanjali Block
2.00-3.00	Basics of Biodiversity <ul style="list-style-type: none"> • What is biodiversity • Basics of biodiversity 	Mr. Santosh R Sutar Regional Director CEE, Bangalore	Field
3.00-3.15PM	Valedictory Ms. Anu.V Senior Research Fellow		