



Knowing the Unknown!

One Day Orientation Program for School Students of Parikrma Humanity Foundation, Bangalore



Organized by

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Introduction

There are over 6 lakh people living in over 800 designated slums in Bangalore. But, over 1 million people live in non-designated slums in abject poverty with no safe drinking water or even adequate sanitation. The children of Parikrma Humanity Foundation (PHF) came from somewhere between this ambiguous terminology and statistics. The children are from 4 orphanages and 70 different communities across Koramangala, Jayanagar, Sahakarnagar and Nandini Layout, with diverse histories. The PHF aspires to provide quality education on par with privileged children.

Students of PHF doing their Pre-University Course had a day out on 21st July 2017, at TheTransDisciplinary University (TDU) Campus, Bangalore. The focus was to apprise them the basics of plant taxonomy, anatomy and methods to conserve plants, basics of heredity and genomics and uses of medicinal plants for primary health care. ISambhav has come forward to bear the cost of the training through its CSR initiatives.

This program is designed in line with their curriculum and will essentially broaden their understanding about the nature specifically medicinal plants and help them develop an interest in the urban nature conservation.

Session Details:

Dr. M. Abdul Kareem, Associate Professor and course coordinator and Ms. Amritha gave an overview of the activities of TDU and briefed the participants about the structure of the program.

Session 1: Basics of Biodiversity and Conservation of Medicinal Plants

Dr. M. Abdul Kareem explained in detail the definition, levels and types of biodiversity citing suitable examples. He also highlighted the levels of threat biodiversity faces and the measures to conservation them like *instiu* and *exsitu methods* - biosphere reserves, national parks, sanctuaries, hot spots, reserve forests, Medicinal Plant Conservation Areas, botanical gardens, nurseries, seed banks etc. He also explained about reasons for extinction of species, threat status, IUCN red list process and Red Data Books.



Session 2: Identification and morphology of flowering plants

In this session, students explored the ethno-medicinal garden. This garden was established under the Centre of Excellence project of Govt of India, which showcases the plant diversity and meant for educating the student community. The garden harbors around 1200 medicinal plants dotted by rare and endangered species. Many of the plants have been assembled under 13 themes representing its usage for primary health care. Ms. Soumyashree N., Research Fellow, TDU taught the basics of taxonomy and morphology to the students as part of the field visit to the garden. They were asked to observe special characters of leaf, flower, branching and smell/aroma. She also explained about historic events associated with some of the plants and plant animal interactions. Students learned to identify the plants through specific characters and appreciate its uniqueness.



Session 3: Principals of Hereditary

In the next session, students learnt about Deoxyribose nucleic acid (DNA), which is a genetic material. Dr. Malali Gowda and Ms. Asha Latha explained the structure, function and applications of DNA with examples and diagrams. The Mendelian experiment was explained with the two laws of Mendelian inheritance and briefly introduced them to



the modern technologies like DNA sequencing, genomics and bioinformatics. Students were exposed to the practical science aspects. They were allowed to examine DNA on agarose gel electrophoresis and then a demonstration was carried out to show the method to extract the DNA from plant and animal tissues. They were explained about DNA amplifier that is PCR (Polymerase chain reaction), its principle and applications.

Session 4: Herbarium, Plant Systematics, Anatomy

In the next session, Dr. Noorunnissa Begum gave hands on training on plant anatomy. She demonstrated the preparation of anatomy slides by taking sections of a dicot and a monocot stem and staining technique. Students were invited to the stage to observe the specimen through the microscope and examine the xylem, phloem, epidermis, & cortex. The students were then asked to form a group of five each and prepare similar slides. She also played the video on Herbarium techniques and explained the importance of preparation of herbarium by showing few herbarium sheets.



Session 5: Emerging health issues in Adolescence and primary health care

The last session focused on primary health care in relation with common teenage problems. Dr. Shilpa Naveen, Senior Research Officer explained the students on how to overcome common adolescence issues like pimple, acne, hair care etc. She also explained few herbal preparations for common ailments like cold, cough and wound healing, which can be prepared at home easily.



Session 6: Valedictory

The program culminated with feedback followed by presentation of certificates to the students by Mr. Ranganath, Rtd. Joint Director, Per- University Board, Bangalore and Ms. Usha Ravi, Joint Registrar, TDU.



Feedback

Impact assessment questioner was given to the students at the end of the program; students conveyed that all the sessions were educative. They highlighted the following

- They learnt the basics, type, threat and conservation measures of biodiversity.
- They learnt the method to identify plants by their uniqueness and their medicinal uses.
- Some of the preparations for primary health care related to adolescence issues were very useful to the students.
- The applications of DNA life in conservation was new to them

- They understood fairly well the basics of taxonomy and anatomy and the need for conservation of the threatened species

Follow up:

- They are planning to make more visits with other batch of students
- Demonstrate the preparation for primary health care to the children
- Develop their school garden with more medicinal plant species.

List of Faculty

1. Dr. M. Abdul Kareem, Associate Professor and Course co-ordinator, TDU
2. Dr. Malali Gowda, Professor, TDU
3. Dr. Noorunnissa Begum, Associate Professor, TDU
4. Dr. Shilpa Naveen, Senior Research Officer, TDU
5. Ms. Sowmyashree, Research Fellow, TDU
6. Ms. Preethi Singh, Research Fellow, TDU
7. Ms. Anu V., Senior Research Fellow, TDU
8. Ms. Amrita G., Research Fellow, TDU

List of Participants

SI. No.	Name of the Student
1.	Soujanya S.
2.	Deepa M.
3.	Vijaya M.
4.	Poornima C.

5.	Vidyashree R.
6.	Deepa R.
7.	Ramya N.
8.	Ruheed Khan M.
9.	Jagannath S.
10.	Namitha R.
11.	Hahee R.
12.	AfreenTaj C.
13.	Priya L.
14.	Rubashree V.
15.	Chaithra S.
16.	Rashmi D.
17.	Tejashwini L.
18.	Sneha T.
19.	Tanushri K.
20.	Chaithra C.
21.	Karsh
22.	Vijay Kumar M
23.	Gowtham
24.	Shiva Kumar G.
25.	Suresh Kumar S.
26.	Shekar Kumar S.
27.	Amrutheshwar O.

28.	BhanuPrakash S.
29.	Sangeetha B.L.
30.	Mohammed Shafiyullah
31.	Satish M.
32.	Sumanth S.
33.	Bharav M.
34.	James
35.	Pavan N.
36.	Pavithra R.
37.	Nayan A.C.
38.	Ramzan W.