MICROSCALE TECHNIQUES IN CHEMISTRY PRACTICAL

1. **Title of the Practice :** Microscale Techniques in Chemistry Practical

2. **Objectives of the Practice :**

- To make aware the students about micro analysis.
- To develop the mind of student for using minimal amounts for carrying the experiments.
- The scaling down of quantities of chemicals and reagents will eventually leads to economy and also saves time, energy.
- The most important thing is that the students understand better and they develop a clear sense of observation.
- This improves the skill of the student and ultimately we got good quality analysts to our country which is today's need, thereby reducing pollution and paving way to green chemistry concept.
- As the experiments are small and easy to handle which eventually leads to less breakage.
- To make laboratory management efficient and economical.

3. **The Context :**

In general, organic and inorganic qualitative analysis constitutes a major bulk in curriculum of chemistry in an academic programme. It consumes a major share of chemicals used not only in rising cost of chemicals which adversely affect the practical exercises. During the chemical reactions, there will be an evolution of fumes and the contaminants which ultimately effect the environment. *The awareness of eco-friendly environment is becoming a global phenomenon*. It is in this context, a need has arisen which was never felt so acute before, that the laboratory chemicals to be used to a minimal level without affecting the principles, skill and understanding of them. This requires a strong desire to develop a proper set of mind from teachers, research scholars and the students. The chemical analysis by Vogel prescribes the use of about 0.2 g chemical for every test of qualitative analysis. In the modern age of sophisticated instrumentation, this needs a drastic revision.

4. **The Practice :**

We propose to reduce the consumption of chemicals without any conceptual deviation from the principles. It uses the same conventional apparatus but on smaller size which saves time, energy and becomes economical to a chemist while performing the experiments.

As per Vogel's "There is no sharp line of demarcation. Only the scale of operation is reduced, while concentration remains the same." "Special experimental and reliable techniques are required for handling small quantities." Micro qualitative analysis is good for beginners but as they grasp, it should be scaled down to gradually to semi micro levels.

5. Evidence of Success :

The outcome of micro-scale techniques indicate that most students were excited and they thought it easy, more interactive and eco-friendly. As well as, students exposed to this approach appeared to develop better scientific reasoning skill.

6. Problems Encountered and Resources Required :

- The micro-scale techniques are not prescribed in university syllabus and hence cannot be implemented on full-scale.
- The micro-scale techniques need expertise and hence it is difficult for students to adopt in early stages.

2. Best Practice in Imparting Health Education

1. Title of the Practice : "Extension Awareness Programme"

2. Objectives of the Practice :

- To increase awareness about the benefits of hand washing among common people as an effective and affordable way to prevent diseases and save lives.
- To promote the culture of hand washing with soap.
- To bring attention to a technique of hand washing to ensure groups large and small can efficiently and effectively wash their hands.

3. The Context :

"Global Hand Washing Day offers us a unique opportunity to focus on the critical yet simple practice of hand washing with soap. It is one of the least resource intensive and preventive public health measures that can be adopted as the first line of defense against various diseases."

Studies indicate that regular hand washing with soap can reduce diaherrial and respiratory infections.

In current context of COVID -19 pandemic , the importance of frequent hand washing with soap has been globally realized as one of the basic COVD – 19 preventive measure which is why this year , global hand washing day where theme is Hand Hygiene for All , Department of Microbiology and Biotechnology of Dhote Bandhu Science College, Gondia virtually celebrated the Global Hand washing Day on 15/10/20.college celebrated for empowering the urban and rural communities with hand washing practices and services.

4. The Practice :

In this event, students were provided with the video demonstrating correct way of washing hands which they carefully watched and understood. Then, they demonstrated the same procedure to their family members and made their own video of demonstrating the hand washing in innovative manner along with the commentary. Some students made the video in the form of playlet. Students then sent videos through Google form link provided to them. Some students sent video through Whatsup. Participating students strictly followed the guidelines on generic preventive measures issued by Government of India to stop the spread of COVID-19 while performing this activity.

5. Evidence of Success:

As our students of both rural and urban areas have been working as ambassadors of spreading awareness regarding the benefits of frequent hand washing and appropriate COVID behaviour with sense and spirit, they are very much in contact with not only their families but also with their neighbours and also observing the tremendous results in terms of consciousness and appropriate practices among them,. The members of the families, particularly women,are getting habituated and motivated for maintaining food hygiene, nutrition and cleanliness.

6. Problems Encountered and Resources Required :

- Lack of strong and stable internet connection and ICT gadgets put us into difficulty of connecting our students with us.
- Proper internet connection as well as ICT gadgets like smart phones were required with student for the accomplishment of the practice.
- We realized that professional trainers would provide better training to our students.