**Using group work with distance learners on an undergraduate taught course *Water Chemistry*.**

Context:

The Water Chemistry course is in year 2 of the undergraduate programme BSc Chemistry. The students are all distance learners, using course books to learn in their own time. Extra face-to-face teaching is provided to supplement the distance learning materials.

For my face-to-face teaching the class size is approximately 100. There are about three females to every male student. Most of the students are in the age range 18 to 25. Most are in employment and some are home workers.

***Activity aims:***

* For students to develop and share a sound understanding of water quality data and how to interpret it
* For graduates to be able to demonstrate skills such as team-working, discussion, independent learning etc.

***Why you developed the activity:***

Until recently the module’s face-to-face sessions were taught in a lecture format. Students listened their teacher's talk and reported that they found the sessions boring. This style of teaching is called is teacher-centred teaching.

In response to student feedback I changed learning method to become more student-centred by asking students to research a topic and then use group discussions to demonstrate and share their understanding. I introduce the lesson by recalling the prior knowledge about water which they have learned. Then I teach the lesson by asking questions to the students. For practicing and evaluation, activity has been done. Understanding skill, problem solving skill and other soft skill development can be made by reviewing exercises.

***What does the teacher need to do?***

The importance of water and composition of water from chemistry point of view, assessment of water quality are discussed by groups of about ten students. When they understand about water and how much chemistry knowledge of water they have I lead group discussions about this context.

Before doing the students should know drinking water is important for human health. So, I ask them to use a dataset, which I provide, to assess drinking water quality in a particular case study.

First, I ask the students to do literature survey about physical and chemical properties of drinking water. This includes how will they assess and which parameters will be determined. Some go to library and use internet, website , or Youtube which are excellent opportunity for sharing knowledge between students.

The final stage is to ask students to report (in their notebooks but also in class verbally) how would they do research work to assess quality of drinking water. In this context , the students are asked about water quality parameters: pH, COD, BOD, DO, TDS etc,

***Feedback on the activity from students and others***

For feedback from students lecture and tutor evaluation sheets have been used. I urged them to write true color report so that tutors will know whether their teaching styles are suitable for student-centred learning or not. Most students are very active and interested in the class. Some say they have never before had this type of assessment.

***Strengths and weaknesses of the activity***

The main strength of this activity is that the group work is active learning, and I found that most students appreciate this teaching method.

There are some issues however. Some students have weak self-study skills and/or weak English. This makes it difficult for them to research English language resources on the internet. Not all students have access to a fast internet connection and this can discourage them at the research stage.

Despite some weaknesses this is a more successful teaching method and I hope to enhance it in future presentations.

***Key words***: active learning; student-centred teaching; water quality