

## Learning report

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In the 25th IUPAC International Conference on Chemistry Education, I delivered a 15-minute presentation on my dissertation which was titled "Students' Representations of Chemical Reactions: Does the Type of Chemical Equations Given Matter?", followed by a 5-minute Q&A session. Besides, I also attended seminars and workshops held in the conference.

Through this learning activity, I have learnt how to deliver so much information within such a short period of time. To start with, the scope of project to be presented should be trimmed so that the most important information, including the background of the study, literature and data, would be presented. In addition, making better use of the PowerPoint also helps a lot. By using diagrams where appropriate, the information can be presented in a more organized way. In this way, not only facilitating my presentation but it also assists the readers to get my message.

In addition to presentation skills, I have also learnt how to defend my study. In the Q&A session, there were some questions raised by the audience which challenged my project. What I did was to explain the aim of my study further and to explain the validity of my analysis with reference to the limitations of my project. The audience seemed to be satisfied with my answers. Not only professional growth but I also feel like this is related to my personal growth. We must admit that we can hardly be perfect and we all have our own limitations. Therefore, it is important for us to be humble in order to keep growing. We should try our best and maximize our own strengths.

Besides presenting my dissertation, I also attended other presentations and workshops during the conference. All these have broadened my horizons in chemistry education. I would try to incorporate what I have learnt during the conference in my future teaching as a chemistry teacher.

One of the most impressive presentations was a plenary session on a topic known as chemical thinking. The presenter shared his team's ideas on structuring the curriculum of general chemistry at the university level. Instead of memorizing core concepts, their curriculum focused on chemical

thinking i.e. critical analysis of problems and situations in chemistry, aiming at helping students develop meaningful connection between core concepts and chemical ideas. This is very inspiring. Nowadays, many chemistry educators have been demanding for critical thinking instead of rote memorizing. However, there were no organized approaches to achieve such an aim in the sense that the elements of critical thinking in the Hong Kong chemistry curriculum are quite dispersed. Their model has given me some ideas about how to cultivate students' system thinking in chemistry in a more organized approach. In my future teaching, I would explore how to incorporate their model used in the university into the teaching context of Hong Kong local secondary schools.

Apart from this plenary session, another most impressive workshop I attended was about teaching chemistry with interesting experiments. In that workshop, the presenter and his team provided their self-made teaching kits for teaching electrochemistry, one of the major topics in any worldwide chemistry curriculum. For example, they taught us how to use anodization, a technique widely applied in aluminium industry, in school laboratory with simple apparatus to make some beautiful markings on aluminium bookmark. I was really amazed by the creativity of the presenter. Not only arousing students' interest in learning chemistry but these activities can also help students understand concepts that are difficult to be visualized. This has aroused my interest in teaching chemistry in a non-traditional but more interesting way.

Other than professional growth in terms of chemistry teaching and learning, I have also gained deeper understanding into the importance of acquiring transferrable skills. On the first day of the conference, during the tea time, I was really shocked that all the attendees were socializing. They all looked happy while chatting with others, probably because they could meet their friends whom they might not have seen for a long time. I did not really know what to do at that moment because I basically knew nobody except my professor who was socializing. Luckily, there was someone who initiated a chat with me. At that moment, I realized that being a scholar does not only mean doing research in the office. Instead, a scholar still has to socialize and collaborate with each other. It has also taught me to be braver and take the initiative to meet new friends, including those who are not at the same age level. It was also a great experience to have some cultural exchange with

people from different parts of the world. I was especially happy when a high school teacher in Australia told me that students coming from Hong Kong are very competitive. This reminds me as a high school teacher, I should spend more effort to equip my students with the skills that they need in the future in order to keep their competitiveness as a global citizen.

All in all, in this conference, I have gained more skills that a scholar needs, including those related to academics and non-academics. Apart from this, from the audiences' comments and questions, I now have more ideas about how I can further continue my research. Moreover, I have also gained deeper insights into chemistry teaching and learning, which would inform my future chemistry teaching. Over and above the skills and knowledge acquired, after attending the conference, I have reminded myself to be humble after my graduation. In this conference, I have really broadened my horizon that there is still much for me to learn and explore. In order to keep improving myself, I would remind myself to "stay hungry, stay foolish". This helps me to reflect effectively in the future and be a better chemistry educator, a better teacher, and a better person.