

Interview: Charles Fogliani

From a modest 8850 entries in 1982, the Australian National Chemistry Quiz (ANCQ) has grown to more than 120 000 entries from 1450 schools from 15 countries in 2009. ANCQ director Charles Fogliani speaks with Helmut HÜgel.

What are the ANCQ's history and aims?

The ANCQ was organised on a pilot scale by Dr Peter Pomery from the University of Queensland as one of the activities of National Chemistry Week. At the end of 1984, the organisation of the quiz moved to the Mitchell College of Advanced Education. In May 1985, by default I took over the role of quiz director, with my wife Maria attending to the administrative work. To this day, she remains the 'lynch pin' in the smooth daily running of the quiz.

The primary aim of ANCQ is to promote the study of chemistry in schools by providing an experience to students that is stimulating and enjoyable, thus encouraging them to have a greater interest in the subject. A secondary aim is to provide a resource to teachers and revealing levels of interest or ability of students hitherto not properly recognised. Also the ANCQ provides ideas that may be of occasional use in classroom teaching and assessment.

How did the quiz develop into an international activity?

I introduced the quiz into Papua New Guinea in 1985, Fiji in 1988, New Zealand in 1989, Malaysia, Western Samoa and Indonesia in 1993, Vietnam and Singapore in 1994, the Philippines in 1995, Sri Lanka in 1997, Thailand in 1998, Brunei, India, England and Switzerland in 1999 and Hong Kong in 2007. The quiz papers are translated into Indonesian, Vietnamese, Tamil, Sinhalese, Thai and this year into Chinese. During this period, I was running workshops on locally produced instrumentation in these countries and at these workshops I was able to interest key people to help coordinate the organisation of the quiz in their country. In the case of Thailand, Professor David Black introduced me to Dr Sunanta Vibuljan during the Chemistry Olympiad held in Melbourne in 1988.

How did the ANCQ become self-funding?

The ANCQ has an entry fee except for entries from Indonesia, Vietnam, Thailand, Sri Lanka, India and the Philippines. In 1985 when I took over the organisation of the quiz, the entry fee was \$1.00. This year it is \$4.29 including GST. To encourage students to enter the ANCQ, the entry fee has been kept considerably less than that of similar competitions. In order to maintain the low entry fee, much of the work has been done on a voluntary basis or at less than market value. In addition, resources have been produced for schools. These resources have been sold to schools and any profit has been used to increase the assets of the quiz. Investment earnings of the assets also contribute to keeping a low entry fee and supporting the entries from the non-paying countries. A low entry fee is in keeping with the philosophy of science for everybody.

Which student groups do the quiz questions/papers target?

When the ANCQ was established in 1982, the quiz papers were at two levels: Junior and Senior. By the early 1990s, it had expanded to four levels: Year 7&8, Year 9&10, Year 11 and Year 12. The papers go to students in various educational environments, and reasonable expectations of student knowledge may be quite variable. Therefore, there are minimum assumptions made about existing student knowledge. The questions have essential information built into the stem of the question so that it is the student's reasoning that is challenged. Questions involving quantitative reasoning are appropriate at all levels. The quiz papers contain many non-quantitative questions. Some of these questions may deal with laboratory practice likely to be familiar to students at the particular level. There are also questions that deal with laboratory situations.

How does the ANCQ help to promote chemistry?

In keeping with the aim that the ANCQ should promote interest in chemistry, the quiz papers contain novel and interesting questions that cover the diverse application of chemistry to life, touching such topics as food, health/medical, horticultural/agricultural, geochemical, atmospheric, mining and processing of ores, industrial processes and products, forensics and also history of chemistry.

In addition, periodic tables, stickers and bookmarks have been produced and distributed to quiz entrants.

What is the educational value of the quiz?

The ANCQ has developed into an educational tool that provides teachers and students with a statewide and a schoolwide benchmark of student knowledge of chemistry. The ANCQ is a unique chemical education activity in the world. Due to the widely varying cultures and differences in courses, there is no inter-country competition or inter-state or territory competition for Australian participants.

The ANCQ is able to pinpoint weaknesses in students' knowledge of chemistry.

What was the reason for producing the Australian Chemistry Resource Book?

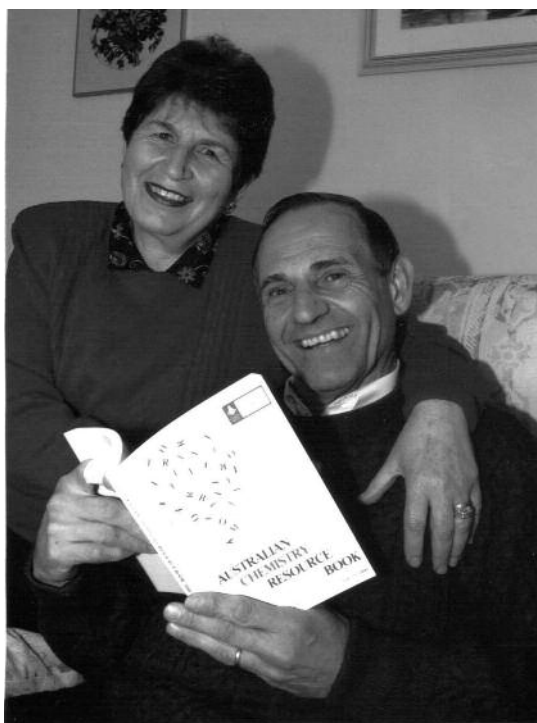
In recognition of the fact that teachers play an important role in organising the ANCQ in their school, the *Australian chemistry resource book* was produced each year up to the year 2000 and sent free to those teachers who had been involved in organising the quiz in their school. The resource book was described by the late Professor Jim O'Donnell as the 'Readers' Digest of Australian chemistry'. The resource book contained educational information on many aspects of chemistry from interesting demonstrations to industrial applications. It provided an opportunity for RACI members to contribute to the teaching of chemistry in schools.

Do you plan to introduce the quiz into more countries?

With the translation of the quiz papers into Chinese, I am exploring the possibility of introducing the ANCQ into Taiwan and possibly mainland China.

Why do you think both teachers and students enjoy their involvement in the ANCQ?

The quiz arouses the curiosity of young minds and



Charles and Maria Fogliani

students enjoy the challenges presented by the quiz. The presentations of plaques and certificates by RACI members is a highlight at school assemblies. In some countries, these presentations are made by dignitaries with much media coverage, bringing credit to both the students and their teachers.

2011 is the International Year of Chemistry. Extrapolating from the success of the quiz, can RACI convince the community that chemistry is for everybody?

The ANCQ helps secondary school students develop an appreciation of the role of chemistry in society and has a strong acceptance in the wider community. Hence, the ANCQ should be widely promoted and made a feature by RACI in the International Year of Chemistry. Convincing the community that chemistry is for everybody is not a realistic goal.

In 2001, **Charles Fogliani** AM, FRACI CChem was awarded the Member of the Order of Australia for his outstanding services to education particularly in the advancement of chemistry education. A major contribution was the organisation of the ANCQ and the production of the *Australian chemistry resource book*. In 1985, he became the chair of the committee organising National Chemistry Week, of which the ANCQ is a major activity.

Impressions of the 2009 ANCQ will be published in a future edition.

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