

Young Ambassadors for Chemistry in Cyprus



All participants in front of the Paedagogical Institute

YAC Cyprus was successfully held in Nicosia, Cyprus 8-11 April 2009. It was facilitated by the Cyprus Ministry of Education and Culture.

A small group of chemistry teachers guided by Valia Angeli-Partassidou and Tasoula Karamichali, under the direction of the Inspector of Chemistry Loukia Anastasiadiou, organised the YAC course at the Paedagogical Institute and the event at Eleftheria Square in Nicosia, the capital of Cyprus.

45 teachers and 37 students from secondary schools from all over Cyprus, participated in the YAC programme.

During and after the course and event we questioned the public, students, teachers and organisers.

YAC course: April 8-10, 2009

45 Participants from all over the island signed up for the course. Course leaders **Erica**



Senior teacher Tasoula Karamichali registers the first participants



Inspector Loukia Anastasiadiou officially opens YAC



Teacher trainer Valia Angeli-Partassidou in charge of practical work

Steenberg (South Africa) and **Lida Schoen** (Netherlands) familiarised the teachers with the YAC project and the SAW programme, with emphasis on 'Climate change' and 'Chemistry in our lives'.

YAC event: April 11, 2009

On Saturday April 11, 2009 37 students and their teachers gathered in Eleftheria square (the Square of Freedom), right in the centre of the capital Nicosia. The Municipality was extremely helpful with setting up a tent (in case of rain) and providing the benches for students to work on. All

teachers and students wore a nice white cap with the YAC logo and date of the event. The public experienced 'chemistry' everywhere: a beautiful banner, a stand with chemistry posters, YAC stickers and a Periodic Table of the elements decorated the area of the event, accompanied by the sounds of 'chemical' music.



The coordination of chemicals team under the YAC banner



Students (roving reporters) interview Nicosia's Mayor on her ideas about chemistry



Students present their TV commercials on new Cypriot cosmetic line

The students worked enthusiastically on a new Cypriot cosmetic line, consisting of bath salts, hair gel, shampoo and cream. Meanwhile roving reporters interviewed the public about their ideas on chemistry.

The organisers invited, apart from a national TV channel, national newspapers, radio channels and many VIPs: the **Mayor of Nicosia Eleni Mavrou**, the **President of the Cyprus Chemical Society Epameinondas Leontidis**, the **President of the Chemistry Teachers Union Nicos Avgoustu**, the **Dean of the Chemistry Faculty of Cyprus University Anastasios Keramidas** and **Michalis Nicolaou - Ministry of Education and Culture**.

Mayor Eleni Mavrou chaired a distinguished jury with members Anastasios Keramidas and Michalis Nicolaou. Choosing the best team, was a difficult job as all students worked creatively and performed well!



Mayor of Nicosia Ms Eleni Mavrou announces the prize winners

This was the end of a glorious day with students and teachers promoting chemistry fantastically!

The same evening the national TV station Sigma showed a 2-minutes news item about the YAC event in the 9 o'clock news (www.youtube.com/watch?v=5mJD5xthHf0)!

Evaluation

During and after YAC Cyprus, evaluation questionnaires could be completed by 34 teachers, 27 students and 61 members of the public. The questionnaires contained quantitative and qualitative questions, with the latter being answered in Greek and requiring translation into English.

A. Teachers

The teachers' questionnaire with 12 questions was administered on the last day of the programme, just prior to the YAC Event. The questions covered aspects of the programme, teachers' motivation to participate in YAC again, application of YAC activities and/or principles in their teaching and lastly, their views of a scientist. 97% of the teachers indicated that the YAC programme promoted the understanding of chemistry in real life. This emphasizes once again the very important role the YAC programme can play in this regard.

Teachers in Cyprus were very motivated to participate in YAC and committed to attend in large numbers. The number of participants was in fact 47, with teachers e.g. travelling from Limassol to Nicosia to attend every afternoon. 97% of the teachers also indicated that they had learnt a great deal from participating in the programme. All the teachers thought the activity should take place more often. We know by now Cyprus will have a second YAC in Limassol, during Easter 2010.



Teachers during group work

Methodologies used in the YAC programme are transferable to classrooms in Cyprus, with 91% of the teachers indicating that they could use the approach during their own teaching. It was interesting though, that in the qualitative part of the question, teachers rated YAC as extra-curricular, rather than part of main-stream teaching. The two qualitative questions on YAC activities and organisation provided valuable feedback to the YAC team.

The local organisers asked 2 participating teachers to act as external evaluators. These mystery teachers filled in their own questionnaires, that helps the organisers and us to go on improving the course and event.

B. Students

The students' questionnaire consisted of 10 questions. 7 Questions were based on a five-point Likert scale, two questions were a combination of YES/NO responses with qualitative

explanations and the last question also explored the students' view of a scientist. The questionnaires were administered at the end of the YAC Event, just before the prize-giving ceremony. All students indicated that i) they acquired knowledge about the application of chemistry in real life, ii) they were satisfied with the content of the teaching materials, and iii) they had learnt a great deal during their participation in the YAC Event. Before the activity, 78% of the students had a positive image of chemistry. After the activity, 89% indicated a positive attitude of chemistry. All students in Cyprus have to take chemistry as a subject up to school-leaving level and the results show that, although chemistry teaching in Cyprus is such, that most students enjoy the subject, a small percentage would benefit from hands-on activities with a clear link to everyday life.

C. Public

Questionnaires for the public were handled out by our 'Roving Reporters' under guidance of two designated teachers. 3 Questions had to be answered before the public knew what the students were doing. Then the students showed the activities and gave a brief explanation before the public answered the next 3 questions. In the last question, again public views on a scientist were explored. The public in Cyprus tend to be well informed about chemistry,



Roving reporters interview the public






possibly because of their own experiences at school, with 79% indicating a positive impression of chemistry. Cyprus has no chemical industries of its own, so the responses would not have been influenced significantly by people using chemistry in their everyday employment. This is confirmed by a question that probed the public knowledge about chemistry. Only 13% of the public indicated that they knew 'a lot', 38% indicated that their knowledge was 'ok' and half of the public interviewed, indicated that they knew little about chemistry. After viewing the students in action, 85% of the public liked what the students were doing and 84% thought it a good way to teach chemistry to students. Electronic media could play a significant role in Cyprus in promoting chemistry. 17% of the public indicated that television would be useful to promote chemistry and 27% indicated that they would prefer using the internet. Slightly more than a third of the respondents (36%) would prefer seeing the students in action.











Images of a scientist

Responses from teachers, students and the public about their views of a scientist can be compared. The question was based on five pictures showing:

- a male and female scientist in a traditional laboratory setting;
- a female scientist in a high-technology laboratory;
- a relaxed, slightly bored scientist;
- a young student mixing large quantities of chemicals, i.e. focusing on manual labour and lastly;
- a scientist hidden by the clouds of smoke made in a chemical reaction.

The responses were ranked by calculating a weighted score for each picture.

YAC Cyprus	1 Most like a scientist	2	3	4	5 Least like a scientist
Teachers					

Students					
Public					

The survey shows remarkable similarities in the views of a scientist expressed by teachers, students and the public in Cyprus. Only the students' responses show evidence of the 'dangerous, explosive' nature of chemistry, so often shown on television and in movies. For the most part, a scientist practicing chemistry, is placed in either a traditional or high-tech laboratory, followed by some bench work and large scale manual labour.

D. Local organisers

To be able to deliver a good set of instructions for holding a YAC course / event, we developed a questionnaire to guide an interview with local organisers. Interviews in Taiwan (2004), South Africa (2007), Mauritius (2008) and Cyprus (2009) provided us with ample information about needs, pitfalls and needed help.

It proved to be difficult to visualise the organisation of an event (also age and level of the students). By now we have short video clips available (Mauritius: www.iupac.org/web/ins/2007-005-2-050). Finding an attractive location for the YAC event is crucial. Organisers also like guidelines for a format for opening and closing ceremonies. Afterwards they usually regret (too) little involvement of language teachers. YAC Russia (Krasnojarsk: www.iupac.org/publications/ci/2006/2802/pp2_2003-055-1-050.html) shows a successful example.

Most local costs are covered by National Science Councils, Ministries of Education and the hosting institutes (all universities). Sometimes the Science Department of the British Council helped (Taiwan). Nearly always approached industries or industrial societies decided negatively about sponsoring. Sometimes the necessary chemicals and packaging are difficult to buy from local (school) suppliers. Usually the YAC team manages to get chemicals sponsored and sent by global industries (see Acknowledgements).

We are happy to report many ideas about spreading the word, as (multi media) publications in a variety of media and new celebrations in Taiwan (2005/2007), Mauritius (2009) and Cyprus (2010).

Future

The next 2 stops of the YAC team will be in Malaysia and the Philippines (April 2010).

A full report about the research-based YAC evaluation will be presented during the 21st International Conference on Chemical Education In Taipei, Taiwan (August 8-13, 2010).

The YAC team published ideas to celebrate the International Year of Chemistry (IYC 2011): www.chemistry2011.org/participate/ideas/show?id=6.

We invite countries and/or organisations to submit a bid.



Acknowledgements

- Cypriot Ministry of Education and Culture for facilitating and financing the course and event;
- IUPAC for facilitating travel expenses for Erica Steenberg and Lida Schoen;
- Loukia Anastasiadou, Valia Angeli-Partassidou and Tasoula Karamichali for perfect organisation;
- Total Pack Trading Cyprus Ltd. for donating ingredients from its R&D lab to produce cosmetics (Theodoros Anaxagorou);

- Prof Mei-Hung Chiu for modification of the original questionnaire
- Bio-Rad for donating a 'Genes in a bottle' classroom kit;
- SASOL Germany for donating the detergent for shampoo;
- Roche Switzerland for donating educational cd-roms: Roche Genetics in Greek;
- GlaxoSmithKline for providing all teachers and students with a Periodical System bag with many goodies.
- Koula Hellström and Eleni Hadjigeorgiou as external evaluators;
- Teachers, students and public participating in YAC Cyprus, for providing valuable information.

Text and pictures: Erica Steenberg and Lida Schoen