German Chemical Society

Division of Chemistry Education

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1. Abstract

Changes in the school structure, moving away from the traditional three-track-system, currently influence secondary education and teacher training in Germany.

The positive trend shown by the latest PISA-study is regarded as an indicator for successful initiatives, both at school and in teacher education programs, such as the in-service teacher training workshops supported by the GDCh and the VCI.

The national chemistry education journal CHEMKON celebrated its 20th birthday in 2013.

2. National Educational Policy

Secondary Level and below

One of the most influential developments of the school system is the reform of school structures. Many states had a long tradition of a three-track school system on secondary level. After four years of primary education (six years in Berlin and Brandenburg), students had been divided into three groups: the academic track (Gymnasium, 9 years and lately reduced to 8), the non-academic, vocational oriented track (Hauptschule, 5 years) and one in between (Realschule, 6 years). Some states additionally hold a tradition of an integrated school as well (Gesamtschule). In the past few years, several states have decided to change this system to a two-track system, the Gymnasium and another type of school which has different names in all different states.

A second, related point of discussion is the length of the academic track, which has been reduced to 12 years of schooling in total but is now back in discussion, perhaps moving towards the old 13 year-system again. The reasons are complaints by parents and other groups that students would not have time for private activities like sports and music etc. anymore and that the workload was too heavy for many students.

Last but not least, the discussion about separate subjects versus integrated science classes in the non-Gymnasium type of school is on-going, still without empirical evidence for a change towards integrated classes.

Across all subjects, inclusion and language support have been pointed out as challenges in the school system.

For science education, the latest PISA-report showed promising results for Germany with a significantly growing trend since the first study.

Tertiary Education

Teacher education programs have risen to a growing interest for researchers. Such studies are aiming at improving outcomes and qualifications for successful teaching in the future.

3. Activities of the German Chemical Society (GDCh) and the Chemical Industry Association (VCI) regarding education (for other topics see the annual reports of the GDCh and the VCI)

Teacher in-service programs have been supported by the GDCh, as in the years before. 280.000€ had been invested in 2013 by the GDCh and the VCI. A new center had been founded in Karlsruhe. The total number of participants was 6446, the number of courses 465.

The national meeting of the division of chemistry education was hold as part of the GDCh-Wissenschaftsforum in Darmstadt in September 2013. 191 participants had registered for the chemistry education strand, with 12 experimental and 30 discussion presentations offered, as well as 49 posters on chemistry education. In addition, 11 workshops had been hold by the in-service teacher training centers, the Merck company and further partners.

4. New Publications

The journal CHEMKON, aiming at teachers and science educators and education researchers at the university celebrated its 20th birthday at the conference in Darmstadt in September 2013. The journal has four editions per year, presenting empirical and experimental research, best practice reports from school and out-of-school education as well as information about the division and current trends both in chemistry and in chemistry education.

A new position paper had been published by the GDCh: Positionspapier "Positionen und Forderungen der Chemieorganisationen aus Wissenschaft und Wirtschaft zu Bildung, Forschung und Innovation", herausgegeben von BAVC, DBG, DECHEMA, GDCh, GBM, IG BCE, VAA und VCI (Januar 2013); pdf: www.gdch.de/positionen.

A new brochure is describing job perspectives especially for graduates from vocational education : Berufsperspektiven in der Chemie (für ChemielaborantInnen, ChemikantInnen und CTAs); pdf: www.gdch.de/karriere.

5. Liaison with the Chemical Industry

See above.

7. CV of the delegate

Ilka Parchmann has become Director of the department of chemistry education at the Leibniz-Institute for Science and Mathematics Education (IPN) and a professor for chemical education at the Christian-Albrechts-University of Kiel in September 2009. Before,

she was a professor at the University of Oldenburg and an associate professor at the IPN and the University of Kiel. She has a teaching degree for secondary education in chemistry and biology and got her doctoral degree in 1997 at the University of Oldenburg for her research and developmental work about the teaching and learning of environmental topics in science education. Following up her doctoral work, she started the project *Chemie im Kontext* (ChiK) in 1997, after studying the Salters project in York (UK) as a post-doc-student. This area is still one of her major fields of interest, and she carries out research and developmental work on context-based learning and teaching. The implementation of innovations into school practice and the design and analyses of the effectiveness of teacher training and teacher professionalisation are two other important fields of her work. At IPN, she has also taken over the leadership for the Science Olympiads and started research projects on structures of interests and talents of different groups of students.

In June 2014 she has been elected Vice President for teacher education, outreach and higher education at the Christian-Albrechts-University of Kiel.