

## Healthcare industry BW

### Valentin Wittmann: "Modules are a novelty"

**The role of Prof. Dr. Valentin Wittmann, chemistry professor at the University of Constance and academic dean, includes providing answers to organisational and content-related questions relating to the chemistry and life sciences courses at Constance University. Another part of his job involves solving potential problems and he is also the point of contact for students and school pupils who are interested in the courses. Martina Keller-Ullrich spoke with Professor Wittmann on behalf of BIOLAGO, discussing the shift from diploma to bachelor and master's study programmes.**

Constance is regarded as a reform university. Was Constance quick to adapt to the new bachelor and master's programmes or was there a lot of opposition from within the university?

Indeed, Constance was very effective in implementing bachelor and master's degree courses. The life science course, which started five years ago, was immediately offered as both a bachelor and master's course. This is not quite the same for chemistry courses, which have been offered since Constance University was founded.

However, the shift from diploma degrees to bachelor and master's was fairly painless as Constance University has always based the diploma mark on written examinations, as well as having certain other similarities with bachelor and master's courses. In 1999, we introduced what is known as the "Würzburg Model", which is very similar to bachelor and master's courses. It consisted of 'basic studies' of six semesters and a proficiency phase of about four semesters, which was similar to today's master's course. Three years ago, the chemistry faculty introduced the bachelor's degree and the first graduates will finish their degrees this summer.

What has changed for the students?



Prof. Valentin Wittmann is the academic dean for chemistry and life sciences (Photo: Keller-Ullrich )

For example, modules are a novelty. By modules we mean that different types of teaching, i.e. lectures, practical training and laboratory courses, are part of a single module. This has always been the case in the Department of Chemistry, but now the term “module” has been officially introduced and care has to be taken to effectively combine lectures and other types of classes. We are being careful to ensure that all modules integrate courses and lectures from several institutes. For example, the Departments of Physical and Organic Chemistry are jointly teaching analytical chemistry. This is very effective and creates no problem at all at Constance University because we do not have institutional barriers.

Another excellent idea is the “key qualifications” where the students are free to choose supplementary subjects. These key qualifications can be a language, philosophy or business studies. Although there are still some practical difficulties, such an approach is ideal as it enables students to broaden their horizons.

What do you think of continuous assessment? Would you prefer a final examination at the very end of the course?

At first sight, continuous assessment sounds like a good idea, but I am worried that the students will not really absorb the interdisciplinary knowledge that I would like them to have. In my experience, students tend to learn the details of a specific field and forget most of what they have learnt after the

test. I also believe that continuous assessment would make it difficult for students to recognise the relationships between different disciplines. A final examination would force them to remember everything they have learnt throughout their entire studies. In addition, there are many students who have start-up difficulties. Such students would end up with a few bad marks at the beginning of their studies, which might badly affect their final mark.

## Is the bachelor's degree a concession to industry?

In the field of chemistry, the bachelor's degree represents a concession to political pressure more than anything else. University studies are generally very academic. Bachelor students find it very difficult to get a job; so most of them carry on to do a master's degree and even a PhD. Industry does not have jobs for those who just have a bachelor's degree. In Germany, bachelor graduates with their three-year training are in competition with laboratory technicians who have the advantage of more practical experience. Industry does recruit those who have bachelor's degrees but prefers university of applied sciences graduates as they have more practical experience.

## How important is the international comparability of the degrees for you?

An internationally recognised degree increases graduate mobility. Bachelor students have the possibility to do a master's degree at another university in Germany or at a university abroad. Diploma students did not have this flexibility.

In terms of international comparability one must take into account that although one degree might have the same name as another, the courses can be very different. The German diploma had a very high profile abroad. Nowadays, we are doing the same as anybody else and I fear that this will also mean a loss of quality.

## Where do you envisage a loss of quality?

Since all bachelor courses, no matter which discipline, comprise 180 credits (1 credit = 30 work hours), we are obliged to reduce practical education. This kind of levelling out is not useful. We put great emphasis on practical education, i.e. laboratory work, which carries more weight in Germany than in many other European countries. Only recently, I received a letter from a couple of students who were concerned about the lack of practical knowledge of foreign students who come to us for their advanced studies. Lack of experience could represent a risk because students have to handle dangerous substances.

## Wasn't the bachelor's degree introduced because of its greater practical relevance?

This may be the case for some disciplines, but certainly not for chemistry. Life science students have to do eight weeks of vocational training. But students find it difficult to find a suitable place because a student who only stays in a company for eight weeks often means more work than benefit for the company itself. To alleviate this situation we also recognise practical training periods at research institutions.

## The master's degree is similar to the previous German Diplom. Does the master's degree have any advantages over the diploma degree?



The University of Constance has shifted from diploma to bachelor and master's courses very early. (Photo: University of Constance, Jochen Staudacher)

One positive aspect that I have already mentioned is the greater mobility. On the other hand, master's courses are also more flexible in allowing the students to choose subject combinations that were not previously possible. In addition to consecutive courses, there are also non-consecutive courses, which enable bachelor students to do a master's in chemistry or to take a study break to work in a completely different field, for example setting up an ecological travel agency, before continuing with their scientific studies, tourism or economics. Such combinations are a novelty.

**In the USA, students can do a doctorate without having a master's. This is impossible in Germany. Is this a disadvantage for German students?**

Yes, in the USA many students start with their PhD directly after their bachelor's degree at the same time as registering for other courses. We have recently introduced a similar model here in Constance: the "Fast Track" – this enables students with an excellent bachelor's degree to do a doctorate without having to do a master's first. This project is part of the "Chemical Biology" graduate school that Constance established as part of the German government's excellence initiative. Initially, the PhD students attend master's courses for a year, but they do not have to do a master's degree thesis, which saves them about nine months' work.

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