

WHICH CHANGES TO THE CURRICULA DO WE NEED TO ATTRACT MORE WOMEN TO STUDY SURVEYING?

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ABSTRACT

Among other things decreasing numbers of students beginning surveying studies at German universities has led to changes in the curricula of some universities from surveying to geomatic, geoinformatic or geoinformation. A lack of students, male students, may necessitate activities designed to attract as well more women into studying surveying. But up to now there has been no evaluation of the target groups which should be addressed by this new curricula.

The situation in general education for women in Germany is good. There are more women than men with a high school diploma legitimating the study at universities or at universities of applied science. The study at universities of applied science is more practical orientated and shorter. On the other hand this degree is combined mostly with a lower salary and status. The study at universities is research-orientated and significant longer, and with this degree it is normally possible to start the career already in management positions.

Over the last few years the number of women in surveying studies has been increasing, but it is still alarmingly low, especially in the scientific personnel staff. In 1999 the percentage of female students, who took a diploma was 30 % at universities with an increasing percentage of 8 percent the last 4 years and 31 % at universities of applied science with a stagnating percentage. The studies at universities of applied science seemed to appeal to female students, but this is changing now. The number of students beginning surveying studies at universities decreased from 674 in 1995 to 278 in 1999 and at universities of applied science from 1160 in 1995 to 700 in 1999. There has always been a cycle of increasing and decreasing numbers of students, but universities are more and more forced to give an account of the used resources and the achieved results. It seems to be remarkable that the number of female students beginning at universities of applied science doesn't decline in that way it does at universities or it does with the numbers of male students.

The necessity to reform studies in the engineering field has been discussed since several years. Employers are asking for a new type of engineer with better non-technical and interdisciplinary qualifications instead of pure technical knowledge. Till now less women than men in Germany are interested in the surveying profession, which depends to a great extent on the image of the profession and the content of the study. A lack of teaching contents and teaching methods considering key-qualifications lead to a lack of female students.

The Working Group "Women in Surveying" of the German Association DVW has been dealing for several years with the situation of women at universities and universities of applied science. To underline the necessity of study reforms the Working Group

distributed in 1998 a questionnaire concerning the situation at universities and universities of applied science during the national Congress INTERGEO in Wiesbaden.

The results were as follows:

The image of the profession seems to be the most important point for the decision against or for surveying. Up to now the surveying profession is understood as a job with rubber boots and picket. The new task areas couldn't be procured. Some universities and universities of applied science changed from surveying to geomatic, geoinformatic or geoinformation. But this diversity now didn't lead to any clarification and didn't meet the content of the study.

Women ask for a change in the teaching methods. The task to solve problems should get the preferences instead of a traditional additive study-cast. In profession nowadays it is more important to realise and understand networked processes and its modelling such as learning of principles than to get detailed special knowledge.

More women than men demand that technology is placed in a context, relating it to effects on society, humans and on the environment. Also the curriculum should provide a holistic view rather than a fragmented view on technology. The training contents and objectives do not appeal to women with interdisciplinary, social and linguistic interests. Technical lectures have to adapt faster and better to the professional needs. This appeals not so easy in view of the fact that the average age of professors of some universities and universities of applied science is very high. Teaching processes have to implement qualifications which are held for timeless. Lectures with other courses of study seem not to be so important because the decision for a technical profession has already been taken. Common reform movements have to take into account gender to improve the situation of female students.

A new curricula should be developed by German education systems in response to the changing educational and professional needs of the society.

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