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The Women's Bachelor Programme "Computer Science and Business Administration" and its Consistent Orientation to Practical Training

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Abstract

This paper describes the teaching and learning experiences made at the women's Bachelor degree programme 'Computer science and business administration'. It focuses on the consistent orientation towards practical experiences. Different courses are described showing the strong emphasis on practical training. One special course is described in more detail: 'Industrial project', which is held in both semesters, third and fifth, and where teams of students perform real projects for private clients from industry.

It is shown that the entire programme is geared to offer practical experiences as much as possible to the students. After two semesters of teaching foundations of computer science, the students carry out the first industrial project supported jointly with advanced students from the fifth semester. At the fourth semester the students complete their 4-5 months internship, the fifth semester students attend the industrial project again and in the sixth semester the students write their Bachelor thesis, usually at an industrial partner's site. The women-only Bachelor degree programme has started in 2009 and has been developed to a success story since then. Almost all graduates have found a job immediately after the studies, or have continued a subsequent Master programme.

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1. Introduction

In 2009 the University of Applied Sciences Berlin (HTW Berlin) has implemented the women-only Bachelor degree programme *Computer Science and Business Administration* (Informatik und Wirtschaft). In this paper we present the programme that is not only mono-educative, but also differs with respect to curriculum and the framing conditions from comparable standard degree programmes. Some of its speciality result from its consequent orientation towards practical experience. In the following, we describe the different teaching formats and their interplay.

2. The Degree Programme 'Computer Science and Business Administration'

The University of Applied Sciences Berlin has a long history in engineering education. The studies of applied sciences at the HTW Berlin lead towards professional practice. Thus, teaching has a strong emphasis on practical application. In the field of information technologies, the institution offers a range of 12 different bachelor and master degree programmes. Among them, the Bachelor's degree course 'Computer Science and Business Administration' has been funded in 2009. It is a mono-educational degree programme, which aims to encourage women to study computer sciences. The decision to set up this programme was inspired by the successful women's colleges in America. Furthermore, the support of a partner programme in Bremen was obtained (Hochschule Bremen City Univ. of Appl. Sc., 2016).

2.1. Target Group

The program was set up to gain more female students for the IT-Sector. As a matter of fact this is achieved, as a high percentage of our students would not have studied computer science at all. This is a result of a questionnaire handed out at the beginning of the programme. Some students say that they did not dare to study computer science as they thought they would not have met the same requirements as their male classmates (who, they suppose, spent most of their time working or playing with a computer). A further indicator is the wide diversity of the student group. The course also attracts elder students (age 30-45), who have a pragmatic interest in tapping into good job opportunities. They aim to achieve a further qualification, but do not want to sustain their position among young male 'nerds'. Other statistics show that the proportion of mothers and women with a migration background are significantly higher compared to statistics including all students in Germany (in the latest semester 17 % of the students are mothers (compared to 5-6% of all students) and 34 % have a migration background (compared to 23% of all students). It also appears that the programme is chosen quite often by students that either already have other qualifications or do not have a German 'Abitur' or equivalent qualification for university entrance, but vocational training and at least three years of work experience. The diverse mixture of women within our programme confirms that the strategy is successful. The more comprehensive evaluation of these phenomena and the deduction of possible consequences for a better designation of the target group is the topic of a current PhD thesis.

2.2. Functional Scope and Practical Emphasis

It has been shown, that women are attracted to so-called hyphenated programmes (e.g. life-science), which combine interdisciplinary fields (Margolis & Fisher, 2003). This can be attributed to the assumption that women's interests are wider spread and more holistic. The programme takes this assumption into account by combining computer science with economics. The students not only learn IT-techniques and -methods but also the technical terms and typical tasks of an important application area. However, in contrast to typical Business informatics studies, the focus is much more on computer sciences. Courses related to informatics form the majority of the curriculum, cf. Fig. 1.

It has also been shown, that women are especially attracted by programmes which are applied and build bridges towards practical work (Corsun & Costen, 2001). Therefore, the study courses set a high value on the transfer of learning content to practical application. In order to empower the students for their later work life, different

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