

# Perspectives of teaching the humanities and social sciences at technical universities

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## Summary

Teaching social sciences and humanities is fully established at technical universities, which was endorsed by the adoption of the Bologna Declaration in 1999. Most technical higher education institutions have managed to incorporate at least 10 % of economic and humanities courses in the instruction, but some of them transferred the form of teaching these subjects from compulsory optional to optional, therefore, they are attended by lower number of students than the desired proportion. Currently, there is also a significant decline in the number of students as a result of unfavourable demographic development, which brings a drop in funding of universities. This condition is also adversely affecting the teaching of social sciences. The article analyses the situation at the VŠB - Technical University of Ostrava and considers the future of teaching humanities. It finds the solution in making the offered courses more attractive, and in their more practical focus.

## Keywords:

Teaching at technical universities  
Humanities courses  
Social sciences

## 1 Introduction

Rapid development of science and technology makes it impossible to plan education curriculum with the prospect of decades. Today, we face the question of whether universities should be a place that will produce graduates with multilateral technical knowledge and expertise, but also with knowledge from the humanities and social sciences, or whether they should provide highly specialized, unilaterally professionally oriented experts. There are a number of reasons supporting each variant. The gradual transition from an information society to a knowledge society implies the need for broadly educated specialists capable of flexible responding to variable needs of the labour market. The development of technology and engineering branches affects the development of society. It is obvious that solving technical problems should also take into account the impact on the environment, public health and the life of society in general. These arguments support the need for a broad-based education. On the other hand, we feel the pressure of employee unions, which require the universities to provide highly specialized workers able to start an employment instantly and perform challenging profession without much training or specialized preparation. So how to respond to the explosive development of various disciplines? Will it be necessary to provide unspecified, broad-based education, or produce highly specialized professions?

## 2 Employers' opinions

The Ministry of Education, Youth and Sports of the Czech Republic commissioned "The Survey of Employers' Requirements on Graduates of Science and Technology Fields of Study" (National Training Fund, 2009). The evaluated aspects included the importance of knowledge in their own field, knowledge of other disciplines, language skills, economic knowledge, and soft skills. The monitored soft skills included presentation skills

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(ability to clearly explain their views), self-assertion, the ability to come up with new ideas and solutions (innovation), the ability to work well in stressful situations, the ability to work productively in a team, and other soft skills (employers could specify them freely). For all employers, a key requirement was thorough orientation in their own field. On average, it represented 50 % of the educational profile. Language skills were second (17 %); some employers demanded knowledge of two foreign languages. The proportion of soft skills was 12 %. Innovative approach, and presentation and teamwork skills were considered the most important of soft skills. The importance of work under stress and assertiveness was smaller.

In the survey, employers were also asked about knowledge and skills on which colleges should place greater emphasis. Soft skills accounted for 51% of requirements, communication and presentation skills, analytical thinking, and independence were required most often. Higher education institutions were criticized that their teaching is separated from practice and does not lead students to gain practical knowledge and skills.

### 3 The situation at VŠB - Technical University of Ostrava

Teaching social sciences at VŠB – Technical University is ensured by the Department of Social Sciences. It offers courses in the fields of psychology, sociology, philosophy, law, political science, history, in a general and theoretical form, as well as in the form of applied disciplines. Most courses are taught as compulsory optional, smaller part as optional or compulsory. At most faculties, during the first two years, students have to select one, at some two faculties two of social sciences courses, which are taught as one-semester seminars. This system ensures that students get acquainted with the offered range of social science courses, and they complete at least one of them. During the study, they can select other courses, mostly focused on applied disciplines. In the past, some courses, especially psychology and sociology, were taught as compulsory. Although this process will ensure stable teaching for all students, it was not successful. According to our research conducted in 2009, the fact that a certain course was intended as compulsory had a devastating impact on its evaluation (Páleníčková, 2009). For example, psychology was considered as an interesting subject by 80 % of the students who selected it themselves, but only by 9 % of the students for whom it was compulsory. It was also shown that students clearly preferred those courses that are of practical importance, such as communication, to theoretical disciplines.

Year	Number of students at VŠB - TUO	The number of students who completed courses in social sciences	Percentage
2011	21,613	10,154	47%
2012	20,850	8,742	42%
2013	19,580	7,953	41%
2014	17,691	6,921	39%

**Table 1:** it shows the number of students who completed courses in social sciences each year in comparison with the total number of students at VŠB - TUO.<sup>†</sup>

The number of students attending social sciences at VŠB – Technical University is relatively high, but it has a decreasing trend. During the last four years, the number of students who attended social sciences courses has fallen by a third. The Department has responded to this situation by introducing new courses with more practical use. For example, since 2012, a new course titled Soft Skills has been taught; it focuses on self-management, mapping the strengths and weaknesses, effective communication, and building a career. In addition, the offer of teaching communication has been extended, the course Managing Personal Finances is being prepared to help students navigate in the world of economy and money.

<sup>†</sup> Výroční zprávy VŠB – TU, [cit. 2. 10. 2015] Dostupné na WWW: <http://www.vsb.cz/cs/univerzita/uredni-deska/vyrocnizpravy-a-zamery/>

## 4 What threatens the teaching of the humanities and social sciences

Decrease in students at technical universities raises the pressure to reduce staff. Technical faculties take on teaching social sciences, though they do not have qualified workers. Teaching humanities courses is allocated to academic staff educated in engineering or natural sciences, or even doctoral students at technical faculties. Their only qualification is often only the completion of one-semester humanities course during their studies. This approach significantly reduces the quality of teaching, which will be reflected in the evaluation of the course by students and in their selection.

If social sciences courses are classified as compulsory, students evaluate them as uninteresting and unnecessary in comparison with technical courses. Their transfer to compulsory optional only makes sense if students can select among social sciences courses. If the compulsory optional courses include technical courses as well, students generally select these because they consider them more useful for future practice, which in turn leads to a reduction in the number of students in the classroom.

## 5 Conclusions

Economic situation of the Czech technical universities, caused by a sharp decline in the number of students due to adverse demographic development may lead to a decline in the quality of teaching social sciences and humanities, or to limiting their offers and reducing the number of hours taught. The solution to this situation may be an offer of courses with lower general and theoretical instruction. Knowledge is still an important value, but what is equally important is their practical applicability in students' personal and professional lives. It seems that we will have to face the fact that most engineering students will not know who Sigmund Freud was or the benefits of psychoanalysis. Unable to students today, mainly graduates of vocational programs with graduation, overwhelm the theoretical foundations of the humanities. Most of them know nothing about psychology, sociology, or philosophy, although it is required within the secondary school curriculum. In addition, engineering students are increasingly looking for more meaningful and practical applicability of the acquired knowledge. If we want to maintain teaching of social sciences, one way to achieve that might be to bring the courses closer to practical life.

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