

# DEVELOPMENT AND SUPPORT OF HIGHER EDUCATION IN THE PILSEN REGION

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## Abstract

Based on the authors' scientific cooperation, research results, and teaching experience, the goal of the article is to analyze examples of development and support of higher education in the Pilsen region. The University of West Bohemia in Plzeň is the only public higher education institution in the Pilsen Region. In the years 2017 -2022, two ESF projects were realized and one of its activities is focused on "Improving Educational Activities and Modern Educational Trends" and on the subsequent implementation and reflection of student education with new teaching methods. The aim of the project is a comprehensive system of interconnection of the education of academic staff in the area of increasing pedagogical competencies with the introduction of new teaching methods into practice and taking into account the extension of pedagogical competencies within the framework of the career order the evaluation of the quality of teaching in full time and part-time study programs as the part of the key criteria for university evaluation. The results show one example of approaches to survey this problem.

## **Introduction**

The University of West Bohemia in Pilsen (UWB) is the only public university based in the Pilsen Region. Its history begins in 1991 when it was created by merging two parts that have existed for more than forty years - the former University of Mechanical and Electrical Engineering (with four faculties - mechanical, electrical, applied sciences, and economics) and a separate Faculty of Education. At present, the UWB has 9 faculties and two university institutes, 62 departments, 110 study programs, and 11,000 students. It offers studies in technical, humanities, economics, medical and artistic fields. Individual faculties do not exist in isolation, but they cooperate in the preparation of students in science and research, they solve joint projects. An example of such cooperation is the ESF II project of the University of West Bohemia in Pilsen. Like the ESF I project (2017-2020), it focuses primarily on improving the quality of education at all faculties. The heterogeneity of disciplines and the unified study environment of the university make it possible to support multidisciplinary and modern education through subject changes, the use of modern teaching methods, and the innovation of existing study programs concerning the needs of the labor market.

In the ESF I project, many analyzes related to monitoring the success of studies, evaluating teaching methods, and evaluating study programs by graduates, applicants, and employers were carried out. Their results helped to identify problem areas in the educational process, which the

researchers focused on in the follow-up ESF II project (2020 - 2022). The basis of the whole system of change became the education of academic staff in the field of university didactics. Courses are offered by the Quality Division in contact and online form. Authors of subject changes can use the methodological support of experts from the university pedagogy team when choosing new teaching methods. The department also provides mentoring for beginning university teachers and technical support for authors of electronic study materials. In the EF II project, new teaching methods are applied to the teaching of approximately 200 professional subjects. The whole process is monitored in terms of achieving the required learning outcomes. Experts from practice are involved in the preparation of subjects, their teaching, and its evaluation, and foreign experience is used. The researchers of the project, including the management of the faculties, meet regularly at seminars designed to share good practices in the field of teaching. Several solutions emerge from the solution of these projects, which by their nature go beyond the scope of the university. Above all, the effectiveness of the continuity of individual projects enabling a system solution was confirmed.

While the first project focused mainly on finding the causes of study failure, setting up a system of different teaching evaluation methods, and a support system for change authors, the follow-up project deals with specific solutions to identified problems and the use of methods that have proven effective. A key element is the education of academic staff in teaching methods and other pedagogical-psychological aspects of working with students. Every year, a significant qualitative shift is evident between the study aids created in both projects. Many authors used the knowledge gained from the courses, some of them learned in their creation of study materials during individual consultations with members of the university didactics team. Project leaders were initially concerned about how academics would accept support evaluations and possible criticism. However, it turned out that personal contact with experts in university didactics and the possibility of continuous control of the created study materials eliminated the problems in this area. A significant feature of the project is the constant evaluation of all processes. The researchers do not rely on their often-long-term experience but try to find out how to respond to the changes in the student population using qualitative and quantitative research methods.

The content of this article is based on research at The University of West Bohemia in Pilsen in two ESF projects of this university (2017 - 2022). The approaches in the survey are based on three steps of this research, the first was realized in the year 2017 as analyses of rules of the system of quality assurance of educational, creative, and related activities and internal evaluation of education of the University of West Bohemia. The second step was realized in the year 2018 as pilot research and the main results were published in this journal in article the quality assessment methods of teaching in the Czech Republic (Safrankova et al, 2019). In 2019, the ESF project of the University of West Bohemia in Pilsen (CZ.02.2.69 / 0.0 / 0.0 / 16\_015 / 0002287) and its activities 2 focused on "Improving educational activities and modern teaching trends" and the subsequent implementation and reflection of students' education with new teaching methods.

The analysis of teaching methods aims not only to improve the educational process but above all to direct educational methods to the activity of students so that educational methods meet the needs of current students. To analyze the quality of teaching and the educational process, the survey used the method of questionnaire research in 2019 in connection with in-depth interviews with students, which took place in 2018. The survey was focused on 616 students of all faculties of the UWB. The results of the questionnaire survey are used to expand (accurate

classification, delimitation, definition) of activation methods of teaching at all nine faculties of the University of West Bohemia.

The third part is concentrated on part-time students and part-time study programs in the part of teaching methods and to about survey on the organizational condition of part-time study and priorities of part-time students.

## **1. Universities and teaching methods**

The quality of teaching at universities and methods of teaching are discussed for a long time. Currently, many authors analyze the problematics of labor market competencies of employees in the context of possibilities in changing theoretical approaches to educational methods. (Grenčíková, Kordoš, & Navickas, 2021; Stareček, Gyurák Babel'ová, Makyšová, & Cagáňová, 2021; Pudil, Somol, Mikova, Pribyl, & Komarkova, 2021; Vetráková, Šimočková, Kubař, & Malachovský, 2020; Safrankova & Sikyr, 2018, 2019). Many authors discuss that continuous improvement of teaching must be permanently implemented in the pedagogical process, which requires increased demands on students and teachers, systematic awareness, explanation of the benefits of change for both parties, training of teachers, and methodological assistance, including the use of feedback mechanisms such as teaching assessment, teacher satisfaction surveys and students. (Lorencová, 2017; Vasutova, 2002; Tureckiova, Veteska, 2008)

This problem is too a long time emphasized and pointed out in earlier declarations aimed at harmonizing the construction of the European Higher Education System (European Higher Education Area, 1999). All other successive European Councils have consistently stated that European universities must contribute to the creation of a Europe of knowledge. These long-term approaches are also reflected in the Amendment to the Higher Education Act, approved in 2016. This obliges universities to ensure the quality of educational, creative, and related activities and the internal quality assessment of these activities in Section 77b. The text of the Act states: "The university is obliged to implement and maintain a system of quality assurance of educational activities in cooperation and mutual relations of the university with other universities, public research institutions and other legal entities engaged in research, experimental development or innovations, employers of graduates, entrepreneurs in the industrial and commercial spheres, business associations and other persons or bodies performing, supporting or using the educational or creative activities of universities or its results." (Amendment to the Higher Education Act, 2016). European Strategy 2030 towards universities declares the necessity to increase analyses on quality of teaching and compare their approaches to new teaching methods.

Continuous improvement of teaching must be permanently implemented in the pedagogical process, which requires increased demands on students and teachers, systematic awareness, explanation of the benefits of change for both parties, training of teachers, and methodological assistance, including the use of feedback mechanisms such as teaching assessment, teacher satisfaction surveys and students. (Lorencová, 2017)

## **2. Goal and methods**

The goal of the article is to analyze approaches to analyses of quality teaching methods and opinions of surveyed students in the University of West Bohemia in Pilsen in years 2017 to 2022 in two ESF projects.

The pilot survey was conducted between May and September 2018 in the form of 79 in-depth structured interviews. The respondents were very active and motivated students, members of the Academic Senate and student organizations, as explained in the introduction. Selected students, especially those of higher grades, were trained for the pilot in-depth interviews. On average, there were 3-4 students (interviewers) per faculty. Trained interviewers conducted in-depth interviews with students, mostly over one hour. Students had at their disposal a detailed scenario of a controlled interview, recorded the interview after the respondent's consent, and then rewrote it for evaluation. The structure of respondents reflects the opinions of selected students from seven faculties (from the Faculty of Mechanical Engineering - 15 students, from the Faculty of Law - 11 students, from the Faculty of Philosophy - 13 students, from the Faculty of Education - 14 students, from the Faculty of Economics - 6 students and from the Faculty of Electrical Engineering 10 students). According to study years, 15 students' study in the bachelor program at the end of the first year, 23 at the end of the second year, and 22 at the end of the third year, 19 students are in the master's degree.

There are 32 key questions, focusing on different perspectives on the evaluation of individual teaching methods. The respondents first answer the questions as to how they would ideally study the field of study at university (ratio of lectures, exercises, other activities) and which activities motivate them to learn, anchor knowledge, and develop skills, including the development of analytical and critical thinking. In the second key part of the in-depth interview, respondents describe in detail the reality of using and evaluating teaching methods in terms of creating and fixing knowledge and skills development (breakdown into lectures, exercises, and other teaching methods), giving examples of good practice but on the other hand approaches of teachers.

The questionnaire survey starts in 2019 was established as a questionnaire focused on the evaluation of quality teaching methods. It aimed to obtain as many suggestions as possible to improve the quality of teaching methods. This targeted intention of the questionnaire survey on the one hand brought very good and detailed results on the quality of teaching methods, on the other hand, it is necessary to emphasize that the results contain only a small number of negative attitudes and opinions and are influenced by students' efforts to contribute to improving teaching methods. The questionnaire identifies respondents (faculty, year, field of study, study average, gender), questions about students' opinions on the study, such as their interest in the study, field of study, favorite and unpopular subjects, overall satisfaction with the study at the University of West Bohemia and possible experience from studying abroad.

In the survey were students of undergraduate and postgraduate study programs at all nine faculties of the University of West Bohemia. In this year these programs were studying 9000 students. The sample was 7 % of all students. To date was used a questionnaire with 39 questions was.

The structure of the respondents reflects the opinions of students from nine faculties: from the Faculty of Applied Sciences 20 students, from the Faculty of Design and Art L. Sutnar – 54 students, from the Faculty of Economics – 65 students, from the Faculty of Electrical Engineering 82 students, from the Faculty of Philosophy – 35 students, from the Faculty pedagogical – 124 students, from the Faculty of Law – 65 students, from the Faculty of Mechanical Engineering – 73 students, and, from the Faculty of Medical Studies 98 students.

According to gender, half of the men (307 in total) and half of the women 's sample (309 in total) from the total number of 616 respondents are represented in the sample. According to the

type of faculty and studied study programs, quite logically at FAV, FEL, and FST men significantly outweigh the number of women, which fully corresponds to reality, and at FDU and FZS the number of women significantly outweighs the number of men. In the economic study programs – FEK, at FF and FPE and FPR, one-third of the respondents are men and two-thirds of women, with certain, statistically insignificant differences in terms of the sample.

The second project ESF II of the University of West Bohemia in Pilsen 2020 –2022 in key activity 2.2: Elaboration of a plan for the organization of a combined form of study at the UWB analyzed firstly opinions of faculty management (pedagogical vice-deans, heads of study departments, other stakeholders in) on a situation with part-time students and part-time system in study programs. Workshops were realized in May 2021 and a questionnaire survey among current part-time UWB students in autumn 2021.

### **3. Results and recommendations**

#### **Full-time students**

Results in surveys show that students who are interested in studying and studying the field are generally satisfied with the teaching methods at the UWB. At the same time, all respondents agreed that they preferred activating teaching methods, both guided discussions and group work, guided discussion within the group, and its presentation. In terms of lectures, they prefer lectures with activating elements, in which the teacher continuously asks questions and students answer them. An important stimulus for reflection can be considered the repeatedly repeated requirement for home preparation during the semester and, based on it, work in exercises or seminars. Although, as mentioned at the beginning of this section, students often responded motivated to study, it is positive that the negative elements in teaching were only rarely reflected. Overall, the interviews show a relatively high level of satisfaction with current methods used in teaching. The results of the processed interviews serve as suggestions for further possibilities of activating teaching. The outcomes of the survey will be the basis for the content aspects of lifelong learning programs intended for the further education of teachers at UWB (they will be gradually implemented into the career code).

Most of the interviewed 616 students from Pilsen agreed on the importance of activation methods in lectures, most emphasize the great importance of exercises for the development of knowledge and skills and various examples from practice. For critical and analytical thinking, it is confirmed that tasks, projects, discussions, and practical examples are important, less so in teamwork. Contrary to the results of in-depth interviews, the only things that were not confirmed by the questionnaire survey are homework and homework, which students emphasized as very important in the interviews. 45% of respondents would prefer home preparation for teaching and, on the contrary, 55% do not agree. 23% are in favor of introducing compulsory attendance at lectures. i.e., one-quarter of respondents disagree, i.e., 77% of respondents agree with the current state of optional participation in lectures.

Teaching methods in terms of expanding students' knowledge. The majority of students – 95 % are satisfied with the exercises, then the practice 74% and 71% of the lecture. Other teaching methods are only for some study programs, i.e., they are not widely used - studios were mentioned by a total of 25% of respondents, of which 16% evaluate them very positively, which is the majority of those who use them. The laboratories were mentioned by a total of 40% of respondents who have them in their study programs, of which 33% evaluate them very positively, which is the majority of those who use them. Overall, 33% of respondents who use

them in their study programs use listening in them, of which 22% evaluate them positively, which is the majority of those who use them.

Teaching that will activate students to learn should include examples from practice, from life - 97% of respondents; a combination of interpretation with a practical example - 96% of respondents; interesting interpretation - 96% of respondents; dialogue of the lecturer with students - 86% of respondents; interactive approach - 86% of respondents; connection of interpretation with excursion - 83% of respondents.

Teaching motivating to learn according to the respondents is one that includes mainly internships and excursions - 89% of respondents, activation in teaching - 81% of respondents, teamwork - 68% of respondents, seminar work - 62% of respondents, repetitive tests - 55% of respondents, obligation to present - 39% of respondents, homework - 37% of respondents.

The activating lecture should contain - additional questions - 81% of respondents; materials online and during the lecture-discussion with students a demonstration - 76% of respondents; smaller tasks during the lecture to think - 73% of respondents; requiring activity from the lecturer - 71% of respondents; so-called collecting points for smaller tasks or activities - 55% of respondents; smaller tasks before the lecture to think - 50% of respondents; only exceptionally a test at the beginning of the lecture, which is passed by only 16% of respondents.

### **Part-time students**

The second project ESF II of the University of West Bohemia in Pilsen 2020 –2022 in key activity 2.2: Elaboration of a plan for the organization of a combined form of study at the UWB analyzed firstly opinions of faculty management (pedagogical vice-deans, heads of study departments, other stakeholders in) on a situation with part-time students and part-time system in study programs. Workshops were realized in May 2021 and a questionnaire survey among current part-time UWB students in autumn 2021.

Discussion in workshops and sharing of experience with teaching and organization of part-time studies at UWB reflects enlargement of numbers of part-time students and study programs in the last 5 years and expected numbers of study programs and students in the next 10 years.

Reasons for teaching part-time students at faculties are in correlation with organization possibilities of part-time students teaching and student requirements Part-time students are teaching in the Pilsen region, mainly in town Cheb and Pilsen.

From an organizational point of view most faculties teach Friday and Saturday, but some too on Thursdays, Friday afternoon, Saturdays, Sundays.

Most faculties have a proven one-week adaptation course or weekly training, or 14 days of training.

Gradual changes are coming of approach to study in generation Z. Starts decreasing age of students for part-time studies. Many young people start to work after secondary school and would like have continued their carrier and study part-time. There are enlarging possibilities to digitize part of teaching as new changes in trends in university teaching. Innovation of teaching methods following the characteristics and needs of the current generation Z (modern technology, availability of materials, ICT tools). Generation Z students prefer certain flexibility

in educational activities (online support, sharing experiences in virtual reality, etc.). in general classes take place on weekends, Fridays, but also other days - students must take holidays and then replace work.

Characteristics of part-time students – results of research

- They know why they study
- They have a clear idea of what they will do after graduation
- Think more about things, look for or see connections based on their practical experience
- They take their studies more seriously
- They can appreciate the work of a teacher
- They can get excited
- They appreciate the possibility of further consultations and an individual approach
- They are interested in studying
- They learn from each other, they cooperate
- They enjoy returning to school
- Overload, sometimes greater differences between students - age, experience
- They are looking for a solution with the least resistance
- They accept failure worse in old age
- Sometimes an attempt to force relief (but less so than full-time)
- Fear of shame Summary of the Czech Republic's experience
- Mostly motivated, relatively much more than full-time students UWB topics

## **Conclusion**

This paper summarizes the current results of the authors' research focused on the quality of teaching methods in the University of West Bohemia in a project realized in the last five years. The results of the survey and realization of methods incited two ESF projects to confirm the main findings of earlier studies cited above and show some interesting tendencies in the students' analyses of quality methods of teaching that should be well analyzed and discussed. These tendencies lie in the fact that students are very motivated to learn and study by best practice examples, but in this connection, they complain of theoretical subjects with connections and practical applications. This satisfaction can increase the motivation of students to study. Students are more concentrated on abilities for the labor market and less on theoretical background. Many of them prefer examples of good practice and concentration to the practical part of universities education.

The results of a survey focused on evaluating the quality of teaching methods confirmed many mostly known means of activating teaching, ie. interactive teaching, communication, discussion, the role of the personality of the lecturer and the instructor. These activation approaches need to be continued. The results of the surveys show a very strong moment of orientation to practical examples, application of theory to practice, and practical use of acquired knowledge and skills. This offers a continuation of the discussion on the role of higher education concerning the direct practical application of knowledge and skills (which rather belong to professionally oriented higher education programs). Today's students, although they proclaim the expansion and deepening of knowledge, still emphasize their rapid practical application.

The results of surveys show that students who are interested in studying and studying are generally satisfied with the teaching methods at UWB. At the same time, all respondents agreed

that they prefer activating teaching methods, both guided discussions and group work, guided discussion within the group, and its presentation. From the point of view of lectures, they prefer lectures with activating elements, in which the teacher continuously asks questions, and students answer them.

Secondly, the results show reflection on knowledge, abilities, ability to analyses, to critical thinking seeing my students. Through questions, it was found that the following competencies are used by teachers for the development of university students' knowledge and abilities. New approaches in teaching - teamwork, context development, analysis. New possibilities for further research in the area of changing key competencies, motivation, and employability of university students, especially in the area of human resources management and diversity management in the management of various groups of workers.

The results are in the methodology of teaching methods and the system of training of academic staff focused on teaching methods is being developed. The aim is a comprehensive system of interconnection of the education of academic staff in the area of increasing pedagogical competencies with the introduction of new teaching methods into practice and taking into account the extension of pedagogical competencies within the framework of the career order. The project will be finished in December 2022, key results will be published at the end of the project.

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