Joint report based on collected data EU and WB Higher Education Institutions

November 2019

Project acronym:	**TeComp**
Project full title:	**Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences**
Project No:	598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP
Number of grant contracts	2018-2467/001-001
Web address of project	www.tecomp.ni.ac.rs
Funding Scheme:	Erasmus+
Coordinator Institution:	University of Nis
Coordinator:	Prof. dr Jelena Ignjatović
Project duration:	15.11.2018. – 14.11.2021
Work package:	WP1 – Preparation
Lead organization of WP1:	University of Gjirokastra
Version of the document:	
Status:	Draft
Dissemination level:	Internal

DOCUMENT CONTROL SHEET

Title of document	Report on the practice in T&L at the EU, Serbian and Albanian HEIs
Work Package	WP1 Preparation
Last version date	November 2019
Status	Draft
Document version	v.04
File name	Reports v.01.doc
Number of pages	
Dissemination Level	Internal

Table of Contents

Moderators:

Romeo Mano

Luiz Seiti

Jelena Ignjatovic

Introduction

TeComp project has set a clear goal to enhance the quality of teaching and learning at university level, in partner countries (PC), Serbia and Albania especially in the field of natural and mathematical sciences by transferring the experience of European HEI-s.
For this purpose, a survey was carried out by means of questionnaires filled out by teaching staff and students, to identify the current situation in the university frameworks in Serbia and Albania. It was found that their performance and quality require improvement.
On the other hand, forms and models of teaching and learning at the EU HEIs are collected through reports of each respective partner institution. The findings will allow the consortium to carry out a comparative analyses between the performance of EU HEI-s on one hand and Serbian and Albanian ones on the other hand, which will be a good starting point for the implementation of the planned activities in the framework of the project and the accomplishment of its objectives.
Just as many conclusions those obtained herein should be considered with a caution. This report is based on experiences collected by representatives of the PC HEIs during their visit to UNIOVI, UBB and UO and some differences in practices between EU partners are noticed. Therefore, it would be wrong to conclude that what is presented herein is representative of the HEI practices across Europe. Therefore, the obtained information is significant and has some significant correlations between different institutions. This gives us the opportunity to use data, compare the surveys conducted in partner countries (Serbia and Albania), make comparisons and suggest/set project specific outcomes.
EU HEIs are defined by great effort and success in using new pedagogical and methodological methods and the high level of integration of modern technologies in the teaching and learning process.

RATIONALE

TeComp project was conceived with the aim of strengthening the competences of teaching and learning in the field of natural and mathematical sciences, since in the Western Balkans countries, specifically in Serbia and Albania, an urgent need for innovation in this field is urgent. The consortium that was made up to write the project proposal has been carefully selected, and includes European partners with long and consolidated experience in offering educational sciences. These European Partner Universities will be able to transfer their effective, productive

and successful experience to analogue institutions in Serbia and Albania through training sessions or hosting visits of academic staff from Partner Countries' HEI-s.

For this reason, it was necessary for the Partner Countries to make a detailed analysis of the current situation in Teaching and Learning at each of the Partner Countries' HEIs. The analysis was particularly focused on the level of education of the teaching staff in the areas of pedagogy, psychology and methodology of teaching, and the level of the use of modern technological tools in T&L. Taking into consideration all individual reports of each PC HEI, the work group of the University of Gjirokastra, which is the leader University for the implementation of WP 1, finalized the report.

Based on the above mentioned reports, a comparative analyses of the situation was carried out to identify the target areas in the teaching and learning at the PC HEIs that require quality improvement, as well as opportunities for their improvement.

FINDINGS OF THE SURVEY IN SERBIAN AND ALBANIAN UNIVERSITIES

In the framework of TeComp project: "Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences", a survey aiming at teachers and students at Serbian and Albanian Universities was carried out. As the main objective of the project is to improve the quality of higher education in the field of natural and mathematical sciences in higher education institutions in Serbia and Albania, in line with advanced EU practices, enhancing their comparability and competitiveness in Europe and beyond, the results of the survey are necessary to judge on the situation of the Balkan Universities, especially in Serbia and Albania, and take action to improve the teaching competency.

When analyzing the situation it is important to keep in mind the specific objectives in the areas of the university study that the project covers:

- to enhance the professional competencies and skills of teaching staff through training courses in contemporary pedagogical approaches, methodologies and educational technologies;
- to improve the educational infrastructure as a basis for a wider integration of pedagogical principles and modern technologies in teaching and learning;
- to offer new / modified courses in psychology, pedagogy, teaching methodology and technology promotion in Serbian and Albanian HEIs in line with modern European strategies;
- to strengthen the personnel infrastructure through the introduction of continuous professional development in the higher education system.

Based on these objectives, the project is expected to achieve the following results:

- Identify and adopt measures and actions needed to improve the quality of teaching and learning processes;
- Improve educational infrastructure;

- Train the teaching staff on the use of pedagogical and methodological principles and new ways of teaching and learning;
- Develop methodology and platforms for wider integration of ICT into teaching and learning.

The purpose of WP1 (PREP) is to identify the necessary institutional measures, activities and documents for the successful implementation of new T&L modes. For this reason, first, the current situation in HEIs was analyzed from the aspect of staff education level lecturers in the areas of pedagogy and teaching methodology (PMT), as well as the level of use of technological innovations in T&L. Following will be the experiences of EU HEIs and the forms of T&L models that they use. A comparative analysis will be made, the needs and opportunities of the PC HEIs will be identified and a concrete action plan will be developed, with the necessary measures and actions.

The lecturers and students of four Serbian universities (Nis, Belgrade, Novi Sad and Kragujevac) and two Albanian universities (Gjirokastra and Korca) volunteered for the survey. Two types of questionnaires (Appendix 1 & 2) were used as the data collection study tool: Questionnaire 1 "Survey for lecturers" and Questionnaire 2 "Survey for students". These questionnaires were designed by the project working group and agreed on their content and quality by CMT members. To fill in the questionnaires, both electronic and physical forms (hard-copy) were chosen. During the period April 2019-May 2019 they were supplemented by finding the cooperation and dedication of a considerable part of the lecturers and students available at the above-mentioned universities.

The data collection, their processing and the preparation of individual reports were carried out by the working groups of each university.

1. BASIC INFORMATION OF PARTICIPANTS

In this section, assessment and analyzes of the results of the survey related to the background of the Universities in Serbia and Albania, undertaken by the partner countries, can be found. The respondents from the University of Nis, University of Belgrade, University of Kragujevac, University of Novi Sad, University of Korce and University of Gjirokastra, were asked about their active hours at work and the division of their academic time according to their responsibilities and duties. From the answers received, it turned out that the situation is almost the same in all Serbian Universities, where both newly-hired and senior professors dedicate most of their time to scientific research, although newly-hired professors spend more time on this activity compared to teachers with longer work experience. On the other hand, in Albanian Universities, both newly-hired and senior professors spend almost the same amount of time on scientific research and teaching process. They also dedicate more time to the preparation of teaching material than their counterparts in Serbian Universities, respectively 23% compared to an average of 16% in Serbian Universities. The rest of the academic time is divided almost equally for the preparation

of lectures and seminars, teaching process, administration, individual work with students (consultations, conducting study research work, etc.), and other tasks that include management, popularization, writing reviews, etc.

2. PREVIOUS EDUCATION OF LECTURERS THAT COULD INFLUENCE THEIR TEACHING COMPETENCES AND OPINIONS

One of the main focuses of the survey was the skills on e-learning methodology and methodology of teaching that newly-hired and senior academic staff have acquired during their education or through training programs which would make it possible to include e-learning material in their teaching as supplementary tools to traditional methods of teaching. The answers of the respondents clearly show that the majority of them both in Serbian and Albanian Universities have studied traditional teaching methodologies and only a low percentage of them have studied electronic teaching methodologies. Compared to senior lecturers, young lecturers have studied both types of teaching methodologies to a greater extend. Meanwhile, a very low number of senior teachers have studied electronic teaching methodologies (19.35%).

In addition, answers to the survey within this section, give information on the percentage of both categories of teachers concerning the type of e-learning methodology they use. It is clear that for both Serbian and Albanian university lecturers, electronic publishing is the main study, followed by online technologies in teaching. Furthermore, the percentage of the academic staff that has attended professional conferences on the application of innovative teaching methodologies is extremely low, but most of them valued the impact of using modern technologies on the quality of teaching and learning with their students.

As far as the experience in giving lectures in English and using electronic platforms is concerned, the results are disappointing. Less than half of the respondents have given at least one lecture in English and even a lower percentage have used electronic platforms, generally Moodle to prepare a whole lecture or part of it.

3. SELF-ESTIMATION OF TEACHING QUALITY / THE LECTURERS' KNOWLEDGE AND SKILLS IN USING MODERN INFORMATION TECHNOLOGIES IN T&L

In order to have a clear idea on the situation related to teaching quality and teachers' competence in including innovative technologies in the process of teaching and learning in the Universities of Serbia and Albania, a survey on these issues was crucial. Analyzing the answers of the respondents, it is clear that the need for integrating contemporary innovative technologies in

teaching is necessary to enhance the quality of teaching and learning. If we look at the response values, we will notice that the opinion of newly-hired and senior professors is almost identical about all the issues. The results show that the majority of both categories of the professors share the opinion that using ICT in teaching has a great impact on the quality of the lectures. This category also thinks that using ICT, practicing group work, preparing multimedia presentations and integrating modern software capacities result as less time consuming.

However, even though teachers' attitude towards the integration of ICT in the teaching and learning process is positive, their self-evaluation results clearly show that the knowledge of both newly hired professors and senior ones is not sufficient considering the use of different tools and applications to support their classes. The majority accepts that their knowledge on this field is limited to the use of Office software package, presentations and electronic books/textbooks as teaching materials. Very rarely lecturers use web conferences and online courses as a teaching method. Self-assessment for a significant part of the questions of this section is under me average, which indicates that improving ICT knowledge and skills in the teaching and learning process is more than necessary.

4. THE USE OF ONLINE PLATFORMS IN TEACHING

Regarding the usage of online learning platforms, all the respondents share the same opinion: online platforms are very important and useful, because they allow students easier and faster access to learning materials and relevant information at any time and contribute to the active engagement of students, but according to the interviewees there are significant obstacles in applying modern technologies in the teaching and learning process. The majority emphasizes the lack of software and the lack of ICT skills among teachers, as the main barriers. Another obstacle in using modern technologies in teaching is the lack of hardware. However, this is considered a financial issue which requires to be handled by the institutions. Lecturers claim the need for systems for electronic students' testing, high quality and expensive laboratory equipment, or possibility for students to remotely participate in experiments.

Other difficulties relate to the insufficient teacher competences, which could be improved relatively quickly through participation in various organized training sessions or in the framework of self qualification. As it is also mention before, only a very low percentage of teachers are able to use online teaching platforms. Consequently, they need to be supported continuously in order to for them to improve their competences and, as a result, to enhance their teaching quality which in turn, will increase students' interest in the subject, improve communication between lecturers and students and definitely impact the students' learning.

5. PREVIOUS EDUCATION AND INTERESTS IN TEACHING SKILLS, THE USE OF TEACHING STRATEGIES AND PSYCHOLOGY IN TEACHING

Competences in Pedagogy, psychology, methodology and English are very important components of teaching. Consequently, this survey focused on photographing the situation in this respect. From the results of this part of the survey, it is clear that the majority of the teaching staff has had the opportunity to get lectures, either during their formal education, or in the framework of self

qualification, on the above-mentioned disciplines. It is very important to state that a very good percentage of lecturers have attended at least one professional conference focusing on teaching and most of them are interested in receiving direct feedback by their students for the quality of teaching. On the other hand, only a low percentage of teachers have had a dedicated ICT course, which would help them benefit from the advantages of using innovative methodologies to improve their performance in teaching.

Most of the lecturers think that teaching skills are crucial component that impact the quality of teaching process and, a very high percentage of the respondents stated that their main goal is to achieve better quality of teaching through continuous training. All responses show that there is a strong lecturers' motivation to improve teaching, so it can be strongly believed that training courses and well-organized education material could give excellent results.

6. THE USE OF TEACHING STRATEGIES, ENGLISH LANGUAGE AND TECHNOLOGY IN TEACHING

The last part of the survey is dedicated to the use of teaching strategies, English language and technology in teaching. Most of the newly hired and senior academic staff boast their ability to involve students in the teaching and learning process. They state that they motivate and encourage students to develop new ideas and find creative solutions to problems during their learning process and they discuss about solving complex problems with them. They also state that they are transparent as far as providing students with plenty information on how to work on the course material, and they generally provide prompt and detailed feedback on students' tests and assignments. Communication with students is the key towards success for this category of teachers, but only a very small percentage is in favor of online communication through social networks. Lectures rarely use software for this purpose.

Even though there is a positive panorama of the situation in this section, all the academic staff indicates that there is always space for strengthening teaching competences. Life-long learning is fundamental to achieve the desired performance and results in the teaching and learning process.

7. SURVEY FOR THE STUDENTS IN SERBIAN AND ALBANIAN UNIVERSITIES

To have a complete view of the situation in Serbian and Albanian universities, it was necessary to carry out a survey for the students in both countries to have a panorama of the students' approach on the actual teaching and learning process. Judging from the answers of the students, we can say that students divide their workload between presence in class and self-paced study where the first one weights more. The data shows that courses on methodology and pedagogy are common for the students of education programs while online courses are delivered mostly to IT students.

Meanwhile, all students agree that the use of online platforms allow students easier and faster access to relevant information and increases their interest in the content of the lecture. They

go even further when they accept that it is very important that teachers are open to communicating with students through social networks reducing the amount of stress and teachers deliver test results, give assignments, and share other useful information with students online.

Based on the students' responses, there is a significant need to improve the teaching process through strengthening cooperation and encouraging students to get involved in group work, as well as to share their knowledge. Consequently, after analyzing all the results, it can be said that the need for the development of pedagogical competences among teachers is not only necessary but also urgent.

CONCLUSIONS DRAWN FROM THE REPORTS OF THE EUROPEAN HEI-S

It is necessary to have a clear view of the situation of the competences of teaching and learning in the European HEI-s to manage to make a comparative analyses of the two realities. The conclusions drawn from the analyses will make it possible to identify the flaws of the education system in PC and make a detailed plan to transfer the knowledge and skills of the European Countries with the aim at improving teaching competences of the academic staff at the Universities of Serbia and Albania.

Based on the reports of EU partners the following results can be highlighted:

1. GENERAL FRAMEWORK

The European Universities including the University of Granada, the University of Oviedo, the University of Ghent, Matej Bej University and the University of Ostrava, are leading institutions in the countries where give their contributions. As the University of Granada has a very early beginning in the field of education, the others are established at a later period, but all the five of them have significant results as far as quality and impact are concerned. Each of the Universities has its own specific aspects but they all share the same dedication and efforts of the staff towards continuous teacher training and innovative projects. It is even determined by law in Spain that the teaching staff of Universities is obliged to attend initial and continuous teacher training as well as engage in teaching publications and innovative projects as a professional merit in the certification processes that everybody needs to pass for the different positions within the university (from the initial one to full professor). In the majority of the European Partner

Universities there exist plans for training teachers during their career either as part of their continuous education, or as part of their doctoral studies.

The contribution of the European Universities goes beyond the borders of the respective countries as these institutions spread their knowledge and expertise by being hosts for students from a number of countries of the world.

2. TEACHERS' PEDAGOGICAL, PSYCHOLOGICAL, METHODOLOGICAL, AND ENGLISH LANGUAGE EDUCATION

As far as pedagogical, psychological, methodological and English Language Education are concerned, the European Partner Universities, all teachers acquire knowledge on these disciplines during their initial education. Students who study any programs related to education have to study pedagogy, methodology or psychology as part of the curricula. However, knowledge and skills on these disciplines can also be acquired after University studies, during the career of teachers. Life-long learning centres offer courses which are not mandatory, but teacher can choose to attend if they want to improve their teaching skills and enhance their overall performance.

In addition, English language is a very important component in the teaching and learning process. Pre-service teachers learn English as part of their education in the EU HEI-s, while academic staff uses English as the language of instruction in a few courses or programs, they use English for research purposes and to give presentations in meetings and scientific conferences.

3. USE OF INNOVATIVE TECHNOLOGY IN T&L

The majority of the European Universities has a very positive approach towards the integration of new technologies in the teaching and learning process. Innovative methodology is now part of their classes contributing to making the communication between teachers and students easier, attracting students' attention to the content of the lecture and enabling a high quality of teaching and learning. More specifically:

The university of Granada has actually well established semi-virtual or virtual courses which students have the possibility to choose instead of in person ones. Teachers and students use the E-learning platform, Moodle, for sharing information (documents, videos, etc.) or communicating with each other through forum to promote debate among students. Teachers also offer assistance to students via Skype or other equivalent systems. Another means of communication between teachers and students is through video conference (Adobe connect), which are videos that are recorded and shared on the platforms. Students studying their virtual master degrees, can attend other students' presentation or doing their own ones. MOOCs for teachers and students are kinds of courses where recorded videos are shared for the wide community of teachers and students.

The University of Oviedo, on the other hand, makes use of Virtual Campus (both basic and advanced level, as well as a course about adapted resources for students with special needs on the virtual campus), corporative software (Office 365, Excel, Access, One drive, basic and advanced levels), LaTeX (basic and advanced), image processing software (Imagej-Fiji), audiovisual resources for teaching, social networks and teaching, MOOCs, cybersecurity, etc.

Ghent University has also a rich experience in implementing a learning management system that is fully integrated with their student, staff and course database. It is mandatory for the teachers to deliver their courses on the university wide implemented electronic learning platform. Since 2019-2020, there is a new platform, Ufora, based on the Brightspace environment. It is a system that integrates ppt, knowledge clips, online assessment, agenda, message, collaborative work space, etc.

The University of Ostrava uses Moodle as an online tool to support the publishing of study materials, create discussion forums, collect and evaluate electronically submitted assignments, and create on-line tests and presentations. At the Faculty of Education, there is a new Department of ICT where they are working with robots, planning their behaviour, applying their knowledge in physics and mathematics, predict the trajectories of SPHERO robot, work on multidissciplinary projects (biology and informatics, mathematics and physics), etc.

Reports of EU partners

REPORT ON THE SITUATION OF HIGHER EDUCATION, THE APPLICATION OF PEDAGOGICAL METHODS AND ITS TECHNOLOGIES AT THE UNIVERSITY OF GRANADA

General framework

University of Granada was founded in 1526 by Charles V and got the Papal Bull in 1531. It is one of the older ones in the country. It is an intercontinental university with seven campuses in three different cities: Granada (Europe), and Ceuta and Melilla (Africa). Also, it has what is considered a “virtual campus”. The location of the campuses made the university the perfect bridge between Europe and Latin America because of the language and the cultural connection, and the Mediterranean countries, and with Africa due to the campuses in the North of Africa (Ceuta and Melilla). University of Granada is open to the world. One indicator is that it has students from 114 countries, and 800 bilateral and multilateral mobility agreements with institutions around the

world. This makes this university to be the leader of European Universities in incoming and outgoing student mobility. It has a wide selection of cutting-edge quality programs with a clear international vocation for more that 60,000 undergraduates. In total, considering also the postgraduates, there are 80.000 students. 9% are international students at undergraduate level, and 21% of international students at postgraduate level. Nowadays, University of Granada welcomes more students from international mobility programs than any other Spanish university. The city is the University and the University is the city: one in four inhabitants belong to the UGR. Leading University in Spain in socioeconomic impact on surrounding province and region. University of Granada is a public and comprehensive university focused on teaching, research and outreach.

The Bologna Process

The Bologna Process, launched with the Bologna Declaration, of 1999, is one of the main voluntary processes at European level, as it is nowadays implemented in 48 states, which define the European Higher Education Area (EHEA). Spain is one of the countries involved in this process.

The university degrees in Spain, adapted to the European Higher Education Area (EHEA) entails three formative levels: grade, master and PhD. These degrees have validity in the 49 countries that are part of the EHEA. The main objective of the EHEA is to facilitate the mobility of students, university teachers and graduates among these countries.

European credit transfer and accumulation system (ECTS) is a credit system designed to make it easier for students to move between different countries. Since they are based on the learning achievements and workload of a course, a student can transfer their ECTS credits from one university to another so they are added up to contribute to an individual’s degree programme or training.

Most of the degrees in Spanish universities consist on 240 ECTS distributed in 4 years.

At the University of Granada, the Vice Rector for Teaching is responsible for all aspects related to the different undergraduate and postgraduate studies at the University of Granada and aims to ensure the correct development of official university teaching (undergraduate, master's and doctoral degrees) as well as non-official university teaching (own degrees).

The teaching methods and the organization of the teaching are coordinated by the teaching departments (which provide the teachers, and are organized by knowledge fields) and the faculties (which have the competencies in the quality control of the teaching practices). Teachers are also supported by the Centro de Producción de Recursos para la Universidad Digital (CEPRUD, its acronym in Spanish).

The Quality, Teaching Innovation and Foresight Unit of the University of Granada has a Training and Teaching Innovation Plan, with the aim of guaranteeing quality teaching and facilitating the professional development of its teaching staff.

Teaching methodology

In every study program (bachelor's and master's degrees) there exist a memorandum, approved by the National Agency for Quality in Higher Education (ANECA), establishing a framework for the type of methodologies which will be used in every subject and the distribution of these types. Every year, the teachers who are assigned a course must present a teaching guide specifying those methods for the following academic year: what type of teaching methodology, what type of assessment, the weight of every assessment instrument, etc. This teaching guide must fit within the framework established in the memorandum. This is controlled by a Quality Commission in every faculty, and also the departments must approve the teaching guides. Therefore, teachers have a certain margin of freedom to decide, but they cannot change the methodology as it was established in the memorandum.

Types of teaching sessions

One of the challenges of the Spanish universities was to organize the teaching with bigger groups than those hypothetical groups in the EHEA. In some Spanish degrees as for example Primary teachers degree we have more than 80 students. For these cases we have to adopt some methodological decisions because it was impossible to count with groups of 25-30 students always: the whole groups attend to theoretical sessions and we divide the whole groups into two or three subgroups of 25 students each for practical sessions, seminars and other kinds of sessions that required more interaction and the use of manipulative, virtual and digital media.
The University of Granada acknowledges 4 type of teaching sessions:

- Expositive lectures: it is conceived for greater groups of students, having a less active role. The teacher assumes the leading role, conducting the lesson by expositions, presentations or explanations (written or oral, generally supported by technologies). Of course, students can also participate. The number of students can vary depending on different variables such as the degree, the kind of contents, or the faculty for example.

- Practice lectures: this type is for medium-size groups, generally for each expositive lesson group there are two practice lectures groups (average size is between 20 and 40 students per group). As it names says, practice lectures are conceived with a basically practical orientation, thus, contrary to expositive lessons, here the students' role becomes much more active.

- Lab lectures: the size of these groups is limited by the physical restrictions on the laboratory which is used (number of seats, number of computers, etc.) and there will be always less than 15 students per group. Therefore, this is a type of session in which there is space for a great amount of autonomous work by the student, supervised by teacher, who can personally follow each student's progress.

- Group tutorials: these are sessions conceived also for smaller groups, as lab lectures. They consist of a periodical meeting with the teacher to analyze the students' learning progress by solving doubts, underlining particular ideas which could remain unclear, or organizing focus groups to discuss about a certain problem.

For each degree, and for each subject, the distribution of expositive, practice and lab lectures and group tutorials varies. Therefore, it is not possible to give a general overview. Even within the same degree, there are great variations from one subject to another, depending on the content and the needs of lab using.

New methodologies of university courses at the University of Granada

The Master Degree in Maths Education, is a semi-virtual program. María Cañadas and Antonio Moreno are teachers of this Master. Moreover, María is its coordinator.
The students of this master can choose to study face to face or virtually. We will focus here on the virtual modality and, particularly, in methodological aspects. First of all, we have to mention that we have students that are able to follow the sessions synchronically and others a synchronically. In what follows, I mention some of the main resources that the teachers and students use to communicate and share information among us.

- E-Learning platform: UGR uses the E-learning platform (Moodle system) for sharing information (documents, videos, etc.) or communicating with each other (between students or students-teacher) through forum. Each course of the master has it own space coordinated by the professor(s) responsible of the course. Also there is a general space for all the students and all the teachers for sharing information and communicate. Teachers use forum to promote debate between students. They also offer assistance to students through Skype or equivalent systems.
- Video system: These are sessions through videoconference (Adobe connect) that are video recorded and shared through the platform. There is a specific audio and video system in the room where the sessions are developed and that allows a good audio and camera quality.

There is a platform to develop the session virtually: adobe connect or equivalent. Students studying the master virtually synchronically can attend the sessions, to other students' presentation or doing their own presentations.

- MOOC : MOOCs for teachers and students. We use for these kinds of courses, a virtual

platform, we record different sessions in specific spaces, we design different tasks considering the possible responses.

Teachers' pedagogical, psychological, methodological, and English language education at the University of Granada

All university graduates in Spain finish their undergraduate education with a B1 degree in English, which ensures a minimum knowledge in that language. The university offers different training experiences for teachers to have a higher level of knowledge but it is not mandatory.

The Faculty of Education has departments of Didactics of Mathematics and Experimental Sciences with a long tradition in teaching and learning methods in scientific areas.

The new teaching staff of the UGR and scholarship holders and researchers are prioritized for the realization of a course of initiation to university teaching. This course is organized by the Quality, Teaching Innovation and Prospective Unit of the University. This course is highly valued for the professional promotion of university professors.

Teachers' training

At the University of Granada there is a specific unit that deals with teacher training: The Quality, Teaching Innovation and Foresight Unit of the University of Granada. It associates the processes of teacher training and innovation, responds to the training and innovation needs of the teaching staff of this University and is committed to a dynamic teaching style, capable of adapting to different scenarios and based on participation, reflection, teamwork, research and entrepreneurship. It is oriented to the development of teaching skills and competences demanded by the current university roles and scenarios of teaching and learning; knowledge, skills and attitudes related, among others, to the diagnosis and evaluation of students, planning, management and evaluation of teaching and learning processes and tutorial action. Competencies that consider entrepreneurship, inclusion, internationalization, digitalization and virtualization of teaching, research, communication and transfer, sustainability, academic integrity and teaching welfare in teaching practice.

Within this unit, there are different courses, both face-to-face and virtual, whose objective is teacher training. In the following website you can consult those designed for the last academic years.

https://calidad.ugr.es/areas/formacion-innovacion-docente/formacion

In the University of Granada there is a program for initial university teachers training, which is devoted to teachers who have less tan 10 years of experience at the university.

It is organized into three phases: (a) the first phase consists of 72 hours of a face to face teaching period where experienced teachers share with novel teachers their knowledge and experiences, (b) the second phase is a distance learning phase of 108 hours, and (c) the third phase is a mentorship period of 20 hours in which each new teacher is assigned to a senior teacher.
In the first phase, the contents are about designing teaching plans, professional ethic, teaching methods, ICT, teaching assessment, tutorial, transfer, and designing a teaching project. In the second phase, the teachers in training must do activities concerning the contents in the first phase. In the third phase, the teachers in training participate in a process of clinical supervision, where each of them are assigned to a senior teachers. They make two reciprocal observations; they record mentor-senior teacher and new teacher. They also participate in three seminars: one for analysing without audio, second for analysing the video with audio; and third reflection on the whole process. Finally, mentors have to make a report about the process with the new teacher assigned.

Methodological material, and English involved in teaching practices

The materials used for the development of the subjects are not conditioned by language. That is to say, articles and manuals will be used in English or Spanish.

Regarding English, some professors teach in English in the bilingual degrees of the University of Granada. The vast majority of classes are taught in Spanish, the official language of the Spanish state.

The University of Granada has a virtual platform based on Moodle where each professor can manage the subject with his students. Most of the faculty use it to share information and to communicate with students.

Professors' attitudes and our attitudes towards using ICT

The teacher regularly uses ICT in the development of his teaching. Specifically, he uses e-mail and the PRADO platform for communication with students, slides for the presentation of content in class and shared documents for group work.

The use of ITC in teaching allows to show illustrations of higher quality, to show properties with dynamic software and to show how different mathematics software allows to approach problems in an intuitive way.

In the UGR there is the Virtual Teaching Center

(http://cevug.ugr.es/presentacion_del_centro.html), whose main aim is to promote and to strengthen the teaching through the ICT, exploring the characteristics of online teaching the

training in these methodologies, and the strengthening of digital production and its dissemination through the Internet. Some services of this center are:

- UGR Virtual Campus (Prado).
- Training in teaching technologies, digital production and online tutoring.
- Massive online open courses (MOOC).
- Multimedia resources website (UGRmedia).
- Apps for teaching in mobile technologies (AppsUGR).
- Center for producing digital media, design of multimedia interactive materials.
- Support to teaching innovation and experimentation base on ICT (Innovacampus).
- Open educative resources (OER).
- Quality system for teaching in semi virtual and virtual modalities.
- Teaching in semi virtual and virtual in degrees and masters.
- Hosting solutions for online training.
- Collaboration with companies interested on online teaching.
- Assessment and analysis of nowadays and future tendencies in teaching.
- Participation in Projects and networks.

Level of cooperation between teachers and students, enthusiasm for orderly improvement and modernization of teaching

Most teachers are particularly interested in improving their teaching. Within this interest, the modernization of teaching is a constant concern. It is common for faculty to seek, and the University promotes, to increase cooperation between teachers and students through the tutorial action plan.

REPORT ON THE SITUATION OF HIGHER EDUCATION, THE APPLICATION OF PEDAGOGICAL METHODS AND ITS TECHNOLOGIES AT THE UNIVERSITY OF OVIEDO

General framework

In the University of Oviedo the initial and continuous teacher education is structured and organized by the Institute of Innovation and Education Research (INIE, in the Spanish acronym), and also supported by other bodies as the Centre for Innovation (C1NN). Despite it is an organized

structure, we must underline that in their university is not mandatory to follow any teacher training itinerary.
Nevertheless, since 2001 and, particularly, since 2007, different changes were introduced in the national laws about the professional career for university teaching staff. These changes started to acknowledge the initial and continuous teacher training as well as the teaching publications and innovative projects as a professional merit in the certification processes that everybody need to pass for the different positions within the university (from the initial one to full professor).
The introduction of these criteria in national regulations has pushed most of the university teachers and professors to follow such courses, especially incoming teachers since 2007 or those who want to progress from associate or assistant to full professor.
The training is organized into three different programs.
The first one is not properly a teacher training course but part of the PhD training courses. The second one is the initial teacher training program, and the third one is the continuous teacher training program.

PhD courses

During the period students prepare their PhD, they have to follow some cross-curricular courses. These courses have a wide scope, but they are mainly focused on research (methodologies, techniques, statistics, etc.).
Nevertheless, some of the courses are directly or indirectly related to teaching issues or to ICT resources. For instance, in the last years there were courses offered about software that can be helpful for teaching (e.g., word processing, especially LaTeX, presentations, graphics and graphical design, data analysis by R, SPSS or MAXQDA, etc).

Initial teacher training

Let us briefly describe how is the access to the profession as university professor in Spain. There are different possibilities of teacher tenures before obtaining the PhD. Some students have a PhD fellowship from Ministry or Regional Ministries during 4 years, the last 2 they can get enrolled in teaching tasks (up to 60 hours/year) supervised by a senior professor. There is also the possibility of having special positions for initial teacher/research training in which during 4 years students get enrolled both in research and in teaching duties while obtaining the PhD, but these positions are hardly ever offered by universities.
Once the candidates obtain the PhD, they have to pass an external certification by quality agencies, and if they succeed, they can be hired as Profesor Ayudante Doctor, which is a tenured position

for 5 years. After that, they can apply for another certification to become Profesor Contratado Doctor, which is a permanent position (kind of Junior Lecturer or Assistant Professor), or Profesor Titular de Universidad (kind of Senior Lecturer or Associate Professor), another permanent position but with an appointment as public servant. Finally, and again after an external certification, they can apply for becoming Catedrático (i.e. Full Professor). In every one of these certification processes both the quantity and the quality of the teaching experience is assessed, and, as part of this assessment, candidates should prove their training in teaching courses. Therefore, even when not mandatory, the current situation is pushing most of the staff to get enrolled in these training courses.

On the other hand, the above describe professional path is not always fulfilled, especially for the initial enrollment in different departments in which there are teaching needs (provoked by retirements or time offs) and/or graduates easily find good jobs out of University. This is happening particularly in some fields as mathematics, computer science or electric/electronic engineering. Thus, sometimes people without previous teacher training can hold temporal appointments as university teacher.

The initial teacher training program is oriented to initial tenured teachers (they have preference over other candidates) but also to PhD students with tenure tracks, recently PhD graduates with tenure tracks or recently hired tenured teachers. It is a voluntary program, but, in practice, it becomes almost mandatory as we explained above.

The program consists of a set of different diverse courses, usually non-specifically oriented to a subject, but trying to be generalist, such that they can cover most of candidates' interests. Courses are usually between 10 and 20 in-person teaching hours, and they can also include on-line work hours. The INIE offers about 30 different courses a year (with limited positions), and candidates can enroll so that if they take more than 100 hours they obtain a special certification of having followed an intensive teacher training. Otherwise, they only obtain single certifications per course followed. Performance is not scored, so that certifications only provide a Pass/Not Pass remark. All the courses are free for the students.

Regarding the topics, the program is divided into 4 blocks: awareness, planning and management, development, and assessment-dissemination-impact.

The awareness block is devoted to create sensitivity among teachers about changes in our educational system and our society and the need of acknowledge this reality. So that courses are about innovation and creativity in higher education, inclusiveness (students with special needs), professional qualification system in Europe, gender perspective in higher education, tutorship and counseling with university students, etc.

The planning & management block includes courses about how to plan and develop an innovative teaching project, what is university management, how to write an adequate teaching contract, what

are the most important technological resources for innovative teaching, as well as the basic training into the Virtual Campus of the University tools. This is a platform supported by Moodle, which is used in all the courses of the University (we will provide more data later). In order to use it, teachers should follow this basic course.

There is a third block about professional development, including courses about collaborative learning, project-based learning, team working, voice control and care, oratory and oral expression, and also some specific ICT courses as the advanced level of the Virtual Campus, creation of multimedia contents (audio & video) and flipped classroom. The advanced level course of Virtual Campus is mandatory for participating in the online degrees (completely taught online).

The last block is about assessment-dissemination-impact, and it consists of a set of different courses like students' competence assessment, communication techniques, dissemination by video and television, MOOC's, teaching projects assessment, and a course which consists of classroom assessment by video recording own's lectures and then discussing with an expert group.

Every year, near 80 novice teachers enroll in this program.

Continuous teacher training

This is a program open to all the teaching positions at the University, therefore younger and older professors can share courses. It is a voluntary program, and it does not have a specific recognition in the professional career at the University, further than the acknowledgement in the certification processes we described above.

The program includes several non-specific courses, despite it is possible that a group of teachers or a department request a customize training in a specific topic. Courses are held during the academic year and they can be between 5 and 20 face-to-face teaching hours, and some other online hours. The most frequent duration is 5 in-person + 5 online hours.

The program is organized by three axes: teaching, research and technology. It offers around 2500 posts a year.

The technology axis includes courses in Virtual Campus (both basic and advanced level, as well as a course about adapted resources for students with special needs on the virtual campus), corporative software (Office 365, Excel, Access, One drive, basic and advanced levels), LaTeX (basic and advanced), image processing software (Imagej-Fiji), audiovisual resources for teaching, social networks and teaching, MOOCs, cybersecurity, etc.

The research axis consists of different courses about responsible research innovation, ethics in animal and human research and experimentation, R+D projects application and management, European projects, spin-off creation, experimental design, qualitative research (MAXQDA), writing research reports in English, presentation of research in English, etc.

The teaching axis offers courses about innovation projects, inclusiveness, creativity, sustainability, team working, active methodologies for learning, communication techniques, coaching and mentoring in the classroom, personal branding, different educative resources (social interaction, theater, environmental tools, etc.), flipped classroom and gamification by using different ICTs, lesson study and counseling, among others.

Additionally, to this institutional program, the University of Oviedo collaborates within a wider training initiative within the G9 group, which gathers 9 Spanish universities. This group offers every year an ambitious program of full online training, so that teachers from the University of Oviedo can participate in a course offered by any of the 9 universities. These courses have a wide scope: from problem-based learning to gamification, or peer learning, statistical analysis, ICT copyrights, etc.

The English-language teaching program

Our University is very concerned about the importance of offering a double path for students so that they can obtain the bachelor degree with a bilingual offer (at least 50% of the courses taught in English). This is now offered in more than 40% of our degrees, in which students can study both in English or Spanish.

Students need at least a B1 level in English to get enrolled in the program, but teachers are asked to hold a C1 level, or with a B2 level they can get certified after following at least 2 specific courses.

The University offers different possibilities for teachers to participate. There are periodical exams for certifying the English level, specific courses for preparing these exams, reinforcement courses for teachers already certified (as a continuous improvement strategy in grammar, pronunciation, communication skills, etc.) and other courses for improving the English level and plan a future certification.

qaParticipating in this program has different acknowledgements. First, the University computes a progressively reduced increase in the teaching hours, so that the first year a course is taught in English every teaching hour computes as 1.5 hours, being reduced to 1.35 the second year, and to 1.2 the third and following years. Second, in the national certification processes it is considered as a merit to teach undergraduate and master courses in English.

Level of cooperation between teachers and students, enthusiasm for orderly improvement and modernization of teaching

In average, the teaching staff in the University of Oviedo is very concerned about the importance of using ICT in teaching and also about the use of new methodologies. Just to give an example, nowadays we have more than 7000 different courses on the Virtual Campus, which represents more than 90% of our teaching is partly or fully virtualized, using ICT support.

Moreover, every year the University opens a call for innovative teaching project (not limited to, but including, ICTs; but also considering methodological innovations). About 130 projects a year are approved, involving around 500 teachers (which is approximately 25% of our teaching staff). Projects have to pass an initial assessment, and, after concluding, another final one, so they are quite demanding.

All the courses within the initial and continuous training are assessed after finishing them, and, in general, they obtain quite good scores about users' satisfaction. Also, students have to assess every year all their teachers, so that there some questions in the questionnaire regarding the use of ICTs and the teaching methodology. Therefore, as teachers, we have a continuous assessment of our duties. Students usually acknowledge teachers' efforts for renewing their methodology and incorporating ICTs.

REPORT ON THE SITUATION OF HIGHER EDUCATION, THE APPLICATION OF PEDAGOGICAL METHODS AND TECHNOLOGIES AT THE UNIVERSITY OF GHENT

General framework

The Belgian constitution guarantees fundamental school autonomy: the government can only define the general directions of the actual educational system (e.g., final competences), but is not allowed to define how the curriculum is developed, implemented and evaluated. This results in a relative large variation in educational curricula.

In addition, teacher education in Flanders (the Dutch speaking part of Belgium) is different pending the educational level: junior versus senior high schools. The former teachers get their training in Professional Higher Education Institutes. The latter get their training in university settings.

Ghent University belongs to the Flemish Educational system. Since 1983, Belgium is a federal state with education being a community policy subject. This results in large differences in educational systems between Flanders, the French speaking and the German speaking community. What is being described here only applies to the Flemish educational system.

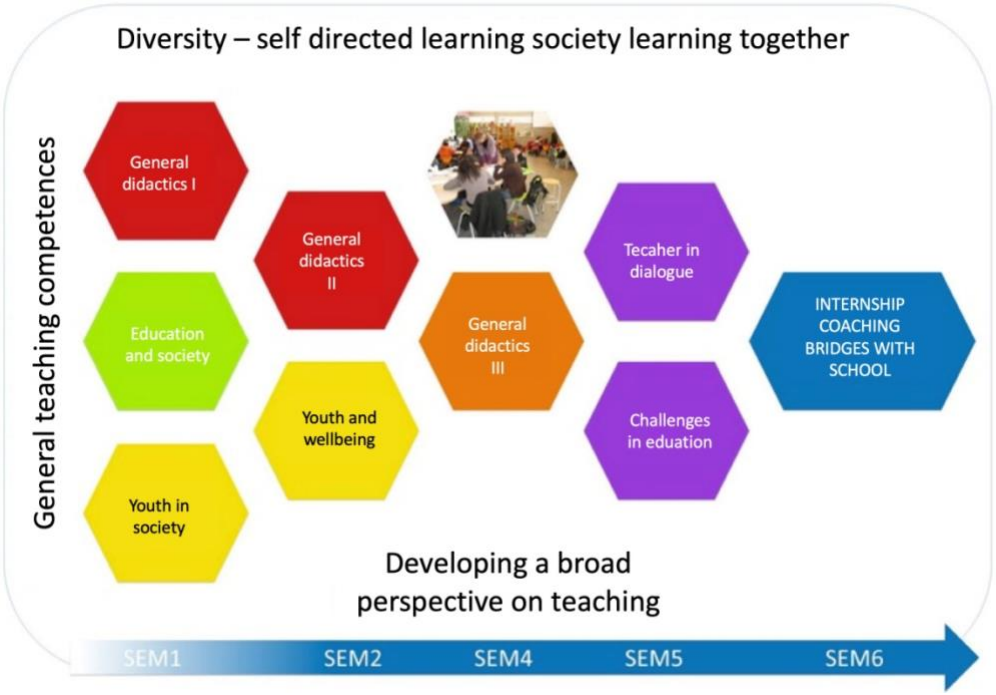
Teachers' pedagogical, psychological, methodological, and English language education at the University of Ghent

All students attain at least a B2 TOEFL level in their English language mastery at secondary school level.

As far as the teacher education is concerned, the formal list of Teacher Competences is very clear about what student teachers should attain by the end of their teacher education. The 10 functional sets of competences clearly refer to pedagogical, psychological and methodological topics. The list of competences is a formal list defined by the government (October 2007; https://www.vlaanderen.be/publicaties/een-nieuw-profiel-voor-de-leraar-secundair-onderwijs-hoe-worden-leraren-daartoe-gevormd-informatiebrochure-bij-de-invoering-van-het-nieuwe-beroepsprofiel-en-de-basiscompetenties-voor-leraren):

i. The teacher as supervisor of developmental and learning processes
ii. The teacher as educator
iii. The teacher as an expert of specific content
iv. The teacher as organizer
v. The teacher as innovator and researcher
vi. The teacher as partner of parents or caretakers
vii. The teacher as partner in a school team
viii. The teacher as partner of external colleagues
ix. The teacher as a member of the larger educational community
x. The teacher as a cultural participant

The former is the base for institutional designs of their curricula that can be different. They will always incorporate pedagogical, psychological, methodological components since these are assumed in the competence framework. The pedagogical content is pursued in line with teacher competence ii. The methodological content is pursued via competence i. and iii. The psychological content is pursued in courses linked to the competence ii. All content can be focused upon when pursuing competence v. that is related to innovation in teaching and learning. In the following picture we represent the course structure along the 6-semester program of a typical PHEI. In the picture course labels have been translated. (https://www.arteveldehogeschool.be/opleidingen/bachelor/educatieve-bachelor-secundair-onderwijs/welke-vakken-krijg-je/ondersteunende-vorming).

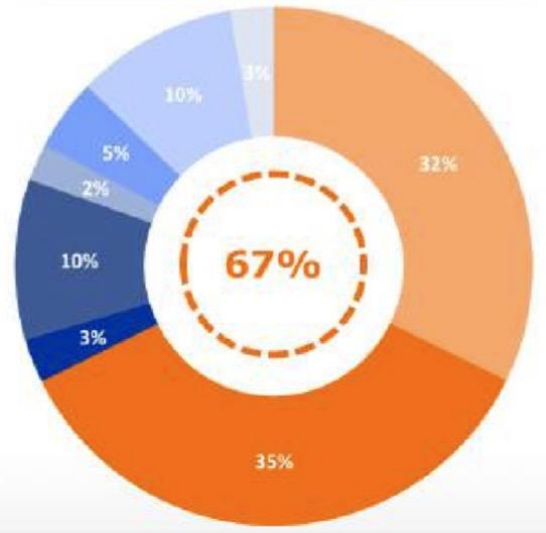


The quality assurance agencies and accreditation organizations focus – when reviewing teacher education programs – the extent to which these competences are being pursued and attained.
Each teacher education institution is completely free in the way they implement their teacher education, approach to pursue and attain the competences. There is no prescribed curriculum, internship model, list of courses, assessment approach, standards attainment assessment.
Teacher education diplomas are awarded by the teacher education institutions; building on their accredited programs.

Assessments of teachers' weakly engagement in realization of teaching, preparation classes, individual work with student and other activities.

Teachers' workload has been a hot item in the Flemish educational context; especially due to a high level of teachers dropping out of the school system. The Minister of Education set up a research study involving teachers from primary and secondary education (see https://www.google.com/search?client=firefox-b-d&q=werkbelasting+leraren). Based on a logbook methodology and involving 9596 teachers. The large-scale study revealed for the first time in the Flemish school system the actual workload. The following results could be obtained (focus on secondary school teachers):

- Average workload in secondary education is 41 hours 50'; when calculated over a full year.
- During lesson weeks, the workload is 47 hours 59' per week.
- 32% of the weekly time is used lesson preparation and correcting student work.
- 35% of the time is used for teaching
- 10% is used for professional collaboration (team meetings).
- 10% is spent for school organizational and policy support tasks
- 5% for classroom administration
- 3% for professional development
- 3% for individual student guidance
- 2% is spent for supervision tasks at school level



Minnen, J. & Verbeylen, J. & Glorieux, I. (2018). De taakbelasting en werkcontext van leraren. Onderzoek naar de tijdsbesteding van leraren uit het basis- en secundair onderwijs. Department of Sociology, Research Group TOR, Free University Brussels. Retrieved on October 15, 2019 from https://www.google.com/search?client=firefox-b-d&q=werkbelasting+leraren

Teachers' training regarding the use of ICT

Teachers in compulsory education classes – *up to junior high school* – receive their formal training in Professional Higher Education Institutes (PHEI). During their training they 'might' receive an introduction to learning management systems, educational technology applications.
For the structure of a typical related teacher education program, see

https://www.arteveldehogeschool.be/opleidingen/bachelor/educatieve-bachelor-secundair-onderwijs/welke-vakken-krijg-je/ondersteunende-vorming). Such a program always introduces all teachers to "Research and multimedia". This consists of 6 practical hands-on workshops – set up in small groups - about 'didactical tools, 'image and sound', 'social media in the classroom', 'digital learning platforms', 'the digital class', and 'research'. Their overall educational program is supported with a learning management system.

When it comes to *senior high teachers*, the situation is different. They are trained at universities where they get a master's degree in their subject + an additional teacher education master or they follow an educational master degree that from the starts integrates the subject domain with teacher expertise. In their program they get an introduction to IT and multimedia via: (a) the general course Powerful Learning Environments and (b) the two specialized didactics in their subject domain.

When it comes to *teachers in higher education*; e.g., universities. The situation is again different:

- Universities hire staff on the base of their "merit" as screened during the application procedure. In the Flemish system, this merit is based on a combination of their research, teaching and service-capacities.
- The former implies that the capacities of starting teachers is not comparable and depends on their education and experience.
- Once they are being hired there is the formal expectation of being involved in professional development. This is part of their "personal development plan" that is being evaluated every two and four years. In this plan, individual teachers can put forward their ambitions in view of – among other fields – teaching. Teachers are explicitly expected to develop their teaching capacities. This is also evaluated on an annual base through student interviews.
- There is a very developed professional development "menu", consisting of supply-driven, demand-driven, and project-driven professional development offers. The project-driven reflects a priority that is being put forward for all teachers. At this moment this is "ACTIVO: Active learning". This project embraces, structural, organizational and procedural innovations to guarantee that all teachers in all faculties and (undergraduate) programs are being trained (see slides).

Methodological material, and English involved in teaching practices

At Junior and senior high schools, by law, schools can decide to offer part of their program in a foreign language, such as English.

This builds on the CLIL format (Content and Language Integrated Learning) that is a method in which French, English or German is used as the Language of Instruction to teach a non-language subject. CLIL can be used at all stages and in all types of secondary education.

- A maximum of 20% of non-language lessons (max 5 periods/week) can be taught in CLIL;
- The school should develop an explicit policy to improve the level of Dutch for all pupils and have a coherent general vision and strategy for language development;
- Realizing the objectives of the non-language subject's learning plan is essential;
- The school must formally approve every individual pupil starting a CLIL project and pupils must commit themselves to remaining a full year in CLIL;
- Teachers need to certify their CEFR - C1 for all skills in the target language or have a Bachelor or master's degree in that language AND be competent in the CLIL method;
- Pupils who do not take up CLIL must be able to choose for a parallel group, where the non-language subject is taught in Dutch;
- The school must clearly communicate all conditions of the CLIL-project to parents, esp. regarding commitment, assessment and the existence of a parallel group;
- Statutory rights of teaching staff must be respected: not accepting a CLIL-assignment for a teacher cannot be a cause of sanctions or change of assignment;
- The school must have planned a method of quality control, monitoring pupils' progress in the non-language subject, the CLIL-language and Dutch;
- The school's formal application must be submitted to and approved by the Ministry of Education.

More than 100 schools adopted the CLIL approach. 50% of the schools choose English as the key second language; the other mainly French or German.

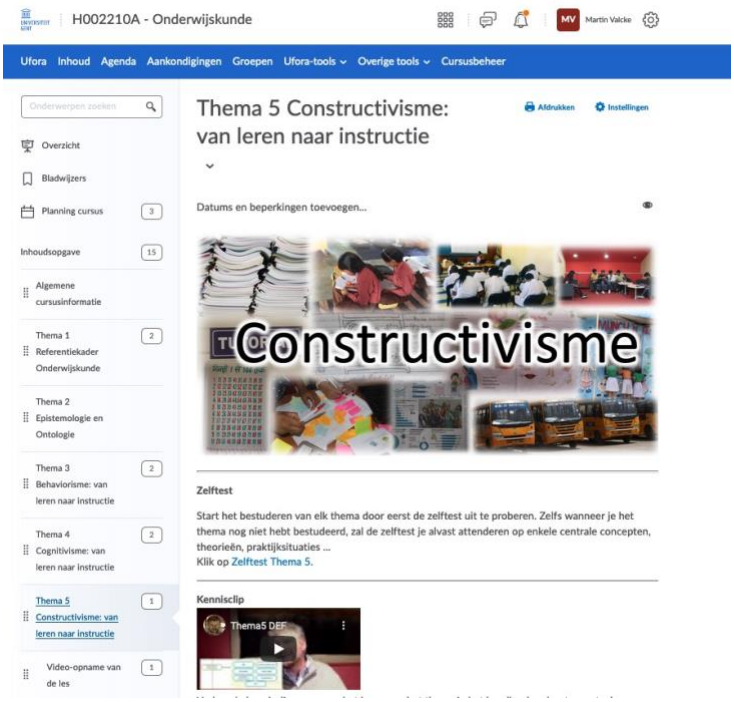
As far as the University teachers are concerned:

- Teaching in English through English as a Medium of Instruction is NOT central to higher education policy in Flanders.
- By law (decree), only 6% of Bachelor programs and 35% of Master programs can be in English. In addition, for each English language program there has to be a Dutch language alternative.
- English is as such only used in 2,8 % of the courses: 1,85 % at bachelor and 21,5 % at master's level.
- When university staff wants to teach in English (or whatever other language) they need to obtain an official language mastery certificate (minimum A1 TOEFL level).
- At Ghent University – November 2019, 33% of the 7073 courses is being taught in English. 23,8% of the 458 programs, is being taught in English .
- 11% of the 3170 teaching staff members at Ghent University, are with a foreign nationality and teach in English.

Schools' attitudes towards using ICT

About 97% of secondary schools apply an online learning platform. 80% of them use the system Smartschool (http://www.smartschool.be/doelgroep/secundair-onderwijs/).

The application fosters mainly a shared agenda, exercising, student tracking system, report functions, links to external apps, homework application, integration of textbooks from publishers. Every higher education institution has implemented a learning management system that is fully integrated with their student, staff and course database.
At Ghent University, teachers deliver their courses on the university wide implemented electronic learning platform. There are no exceptions; the use is mandatory. Since 2019-2020, there is a new platform, called Ufora, based on the Brightspace environment. The next figure gives a screenshot of the UGent Ufora system that integrates ppt, knowledge clips, online assessment, agenda, message, collaborative work space, etc.



There has been a university wide training program with offers for individuals and teams to switch all courses to the new environment.

The use of Ufora is central to the professional development approach and is being supported through supply-driven, demand-driven, and project-driven professional development offers.
The Activo project pushes the adoption of active learning strategies at undergraduate level (large groups of students). This all-embracing program (see separate ppt) has at its core the use of the Ufora system; see screenshot of the Activo-project page:

All teaching staff gets a training offer in view of the adoption of blended learning that is considered the corner stone of the teaching and learning approach at Ghent University (https://www.onderwijstips.ugent.be/tips/blended-learning/).
At regular moments special innovation days are being planned: https://www.ugent.be/nl/univgent/waarvoor-staat-ugent/kwaliteitszorg/onderwijsdag2019.htm

Professors' attitudes towards using ICT in teaching

When it comes to the use of the learning management system; there is NO choice; Every teacher, for every course has to use the Ufora system since this is the formal teaching and learning 'channel' in the educational system.

As such, the attitude of teaching staff does not really matter.
At least each two years, the teaching and learning approach for each course is being evaluated on the base of student questionnaires. This questionnaire focuses on teaching approaches (e.g., collaborative learning, field work, embedded research, student input …), use of innovative technologies, …

The concrete results of the evaluations are private property of the individual staff members and are discussed at program level.
The outcomes of student based evaluations is the starting point for a course redesign: see https://www.youtube.com/watch?v=THdNUoeZEoE
The results of the student evaluations are input for a tough redesign process of which a large part focuses on teacher professional development. In the following example we see the homepage of the "quality cell'" of the faculty of Medicine and health sciences.


UNIVERSITEIT GENT

FACULTEIT GENEESKUNDE EN GEZONDHEIDSWETENSCHAPPEN

OPLEIDINGEN ONDERZOEK DIENSTEN OVER DE FACULTEIT CONTACT INFO VOOR

Home > Over de faculteit > Cluster onderwijskwaliteitszorg & -innovatie

Cluster onderwijskwaliteitszorg & -innovatie

De Facultaire Dienst Onderwijsondersteuning (FDO) ondersteunt de opleidingen in de faculteit bij het uitwerken en optimaliseren van hun onderwijskwaliteitszorg- en onderwijsinnovatiebeleid.

Om tegemoet te komen aan de universiteitsbrede onderwijsvisie "Creatieve kennisontwikkeling" gaan onderwijskwaliteitszorg en onderwijs innovatie hand in hand.

Kwaliteitszorg

De cel onderwijskwaliteitszorg en -innovatie werkt beleidsondersteunend t.a.v. de faculteitsraad op vlak van onderwijs.De cel bereidt beleids- en adviesteksten voor en geeft alzo het facultair onderwijsbeleid mee vorm.

Daarnaast staat de cel ook in voor het monitoren van de facultaire kwaliteitszorg inzake onderwijs en ondersteunt en begeleidt opleidingen en lesgevers bij de kwaliteitsbewaking en -verbetering van hun onderwijs.

De faculteit hanteert daarvoor het MOVINGG-model (model voor onderwijskwaliteitszorg en -vernieuwing in de Geneeskunde en Gezondheidswetenschappen) dat vorm kreeg in het MOVINGG-handboek.

Het onderwijskwaliteitsverbeterplan 2018 licht de facultaire visie rond onderwijskwaliteitszorg toe.

Dienstverlening voor opleidingen

→ Advies en begeleiding bij opleidingsspecifieke kwaliteitszorg
→ Ontwikkeling en organisatie van evaluaties met betrekking tot het onderwijs en focusgroepen
→ Ontwikkeling en organisatie van de evaluaties bij stakeholders betrokken bij onderwijs
→ Bevragingen met betrekking tot het onderwijs op maat van de opleiding
→ Monitoring en ondersteuning van kwaliteitszorg binnen de opleidingen via jaarlijkse overlegmomenten

The results of the quality review in this exemplary faculty resulted in a training offer in view of:

- Innovative assessment approaches
- Language support for students
- Prevention burnout and suicide in students
- Use of learning analytics
- Peer tutoring
- Innovative master thesis support
- Motivating ways of teaching
- …

To give an estimation about university teachers attitudes, the following is based on our contacts with teaching staff; no hard evidence can be put forward; percentage refer to the % of staff adopting a positive attitude and willing to implement this in their learning and study environment:

- attitudes towards using ICT in teaching: 100%
- group work: 60%
- modern software capabilities: 80%
- students' presentations: 50%
- discussion with students: 100%

The former is a difficult exercise since this depends on the specific learning goals of a course, it differs depending a bachelor or master level course, it differs between programs within and between faculties; it differs depending on the number of students in a course (session).

Our attitudes on the use of ICT in teaching

I am one of the key developers off online learning in higher education in our context. As such, there is no doubt that I am a strong advocate of – grounded – usage of IT in education. It all is related to the nature of the learning objectives. As such, I am not a fan of 100% eLearning, but a big fan of blended learning. This is also the approach embraced by our university.

I push the use of eLearning solution especially in view of 'quality' since it obliges teachers to be very structured, organized and transparent in what they have to design and develop before the actual teaching process. Since we teach in a university where we have to work with large groups of students, new technologies help to enhance and support communication, distribution, collaboration, interaction …

In view of critical thinking and transferable skills ... This all depends on the nature of the learning objectives that are stressed in a course and the way in which new technologies might support the related instructional strategies. This does NOT depend on the media being used, but on the instructional strategies being implemented that might be supported with new technologies.

Level of cooperation between teachers and students, enthusiasm for orderly improvement and modernization of teaching

Student teacher collaboration is lower at bachelor level and large at master level. Cooperation can be small or large; e.g., in view of internship or master thesis activities, there is a one-to-one relationship. In many cases, cooperation depends on the phase in the learning process; e.g., there is a strong interaction when feedback moments are being organized (up to 2 time in a semester).

REPORT ON THE SITUATION OF HIGHER EDUCATION, THE APPLICATION OF PEDAGOGICAL METHODS AND ITS TECHNOLOGIES AT THE UNIVERSITY OF BANSKA BYSTRICA

General framework

Matej Bel University in Banska Bystrica (Slovak Republic) is one on the leading national universities. It was established in 1992 and currently it consists of the following faculties:

- Faculty of Natural Sciences
- Faculty of Philosophy
- Faculty of Economy
- Faculty of Law
- Faculty of Education
- Faculty of Political sciences and International relations

Due to the contents of the project we concentrate ourselves to the area of mathematics, computer science and natural sciences.

Structure and basic data of the Faculty of Natural Sciences

The faculty was established in 1995 as a result of division the former Faculty of Humanities and Nature science into faculties of humanities and nature science. It consists of the following departments:

- Department of Mathematics
- Department of Computer Science
- Department of Physics
- Department of Biology
- Department of Chemistry
- Department of Environmental Sciences
- Department of Geography and Geology
- Department of Technical Sciences

It offers bachelor, master and PhD studies in the above topics as well as teacher training in combination of two subjects. It has 94 academic employees and over 600 students in internal study

and about 50 students in external studies. The study programs accredited and offered by the faculty are the following:

Bachelor degree:

- Forensic and Criminalistic Chemistry
- Applied Geology
- Geography
- Environmental Safety
- Ecology and Protection of Ecosystems
- Mathematics
- Applied Computer Science
- Teaching (combination of 2 subjects)

Master degree:

- Applied Chemistry and Forensic Practice
- Applied Geology
- Geography and Regional Development
- Environmental Management
- Ecology and Protection of Ecosystems
- Mathematics of Data Analysis and Finance
- Teaching (combination of 2 subjects)

Doctoral degree:

- Geochemistry
- Evolution of Ecosystems and their Protection
- Remediation of Environmental Burdens
- Mathematical Analysis
- Theory of Physics Education

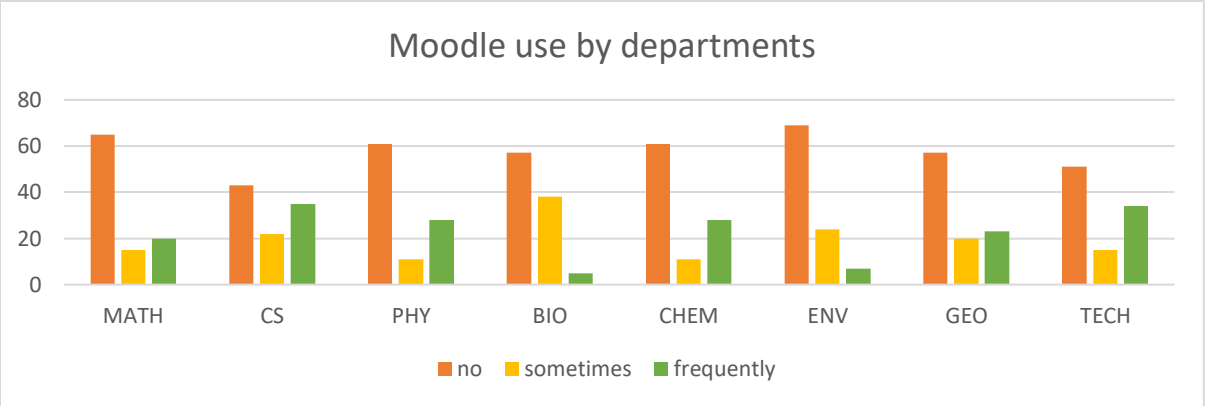
The number of students in particular programs in the academic year 2018/19 is in the following table:

Degree	**Form of study**		**Total**
	Internal	**External**	
Bachelor	383	47	430
Master	198	30	228
Doctoral	20	5	25
Total	**601**	**82**	**683**

The education follows the standard system used in Slovak Republic, i. e. classical face to face education with average number of 24 lessons in Bachelor degree and 20 lessons in Master degree, with the exception of the last semester, that is mostly devoted to the preparation of the final thesis. The amount of the lessons is approximately equally divided among lectures and seminars. In the educational study programs at the Master level a considerable share of lessons are devoted to practical placement at elementary or secondary schools.

Technical means for education

Thanks to the participation in previous project and institutional support all students and employees had access to computers connected to internet, including access to scientific databases, like ScienceDirect or WoS. All the departments possessed computer laboratories available also to students' individual work.
The major tool for the online support of education was the Moodle software, as the university standard. In the internal study programs, however, there were no subjects taught exclusively by Moodle, but it served to different levels as a complementary method of teaching. No other tools of online education, like MS Teams or Google Meet were used.



The table above shows the percentage of subjects delivered by particular department in Moodle which is used as a complementary tool, it is not the principal method of education.

Human sources

The number of teaching staff at Faculty of Natural Sciences is 99. The following table shows numbers of staff members who graduated in particular scientific disciplines, i.e. not in educational programs (group A), and those who graduated in education (group B).

Department	MATH	CS	PHY	BIO	CHEM	ENV	GEO	TECH
A	7	3	3	4	5	8	2	9
B	5	12	5	9	10	1	13	3

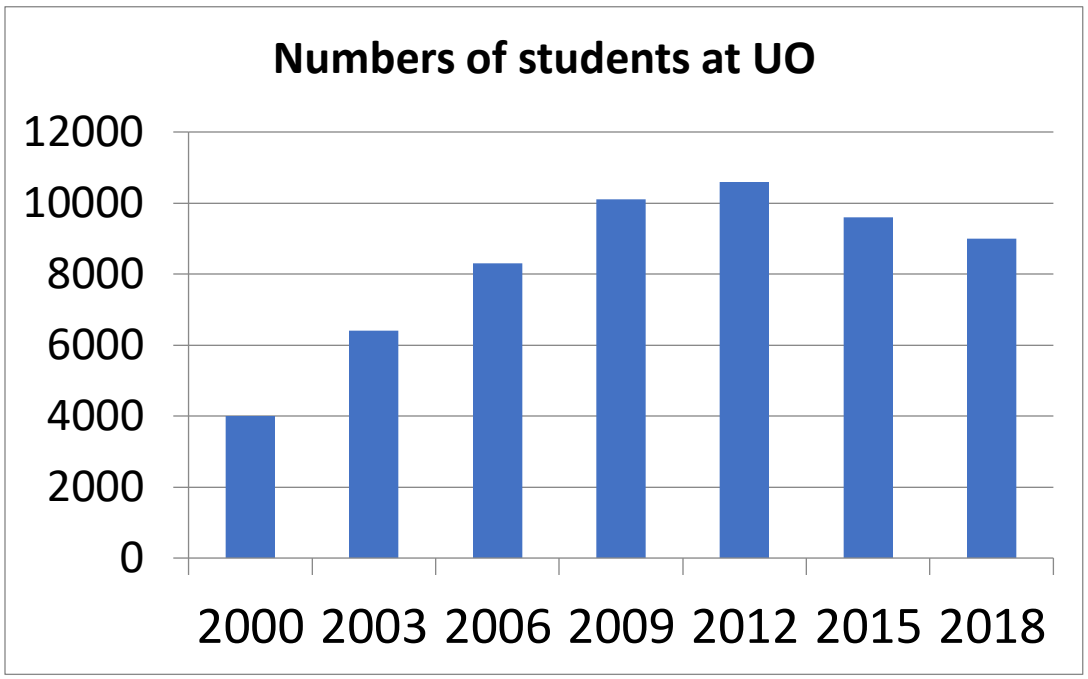
As the table shows, the number of staff members graduated in education (58) is slightly higher than the number of graduates in particular subjects (41). Experience shows that this ratio is suitable for education in teacher training as well as e.g. advanced postdoctoral studies in mathematics, biology, chemistry, etc. Therefore, the long-term aim of the personal management is to maintain approximately equal share of the both groups.

REPORT ON THE SITUATION OF HIGHER EDUCATION, THE APPLICATION OF PEDAGOGICAL METHODS AND TECHNOLOGIES AT THE UNIVERSITY OF OSTRAVA

General framework

The University of Ostrava was established in 1991 with three faculties (Faculty of Education, Faculty of Arts and Faculty of Science). In 1993, the Faculty of Health and Social Studies was founded. In 1996, the Institute for Research and Application of Fuzzy Modelling was founded. In 2008, the Faculty of Social Studies was founded and the Faculty of Health Studies was transformed into the Faculty of Medicine.

The University of Ostrava has become a significant educational and research institution, which also emphasises the so-called third role of a university: social role. It is an important player in the field of social and cultural events in Ostrava and across the region. It directly takes part in organising events for the public (for example, Ostravská Noc vědců, Jsme Ostravská!, etc.) as well as through students, graduates, and academics. The cultural spectrum is thus enriched by university diverse and sophisticated impulses.



The research staff at the Institute for Research and Application of Fuzzy Modeling, who is engaged in the ERASMUS+ project, primarily participates in the education of students from the Faculty of Science. The following shows the structure of the Faculty of Science.

Teaching in English

All faculties of the University of Ostrava (UO) offer education of selected courses in English. The education is mostly supervised by junior pedagogues (less than 12 years of practice) as well by senior pedagogues (12years+ of practice) as most of them experienced their studies in English. In addition, the UO offers its employees the possibility to regularly take part in courses of English. Within the ERASMUS+ programme, the UO is a destination for foreign students. Most of pedagogues prepare individual education for these students in English. The UO also offers job positions to foreign pedagogues through open selection procedures. Consequently, some courses are taught in English and certain faculties and research institutes hold regular scientific seminars in English with invited foreign guests. The following table provides an overview of programmes offered to students in English.

Bachelor's Degree Programmes		
English Philology	3 years	B2
Mathematics	3 years	B2
Master's Degree Programmes		

English Philology	2 years	C1
General Medicine	6 years	B2
Mathematics	2 years	B2
Doctoral Degree Programmes		
Mathematics	4 years	C2
English Philology	4 years	C2
Social Work	4 years	B2

Pedagogical education

Generally in the Czech Republic, university pedagogues do not have to have pedagogical, psychological, and methodological education to be able to teach in the higher education sector. That is why only some pedagogues had this education during their formal education, primarily the teachers of the Faculty of Education, who had to undergo this education obligatorily. Starting point for educational work in natural sciences, especially mathematics, in Czech Republic, in almost all schools is learning method of Milan Hejny. Hejny is Czech and Slovak mathematician, an expert in didactics of mathematics, a professor at the Pedagogical Faculty of Charles University in Prague. Hejny's method is based on non-traditional way of teaching mathematics and its basic principles are: Building Schemas, working in environments, interlinking topics, character development, growth of motivation, real-life experience, enjoying mathematics, development of personal knowledge, working with errors, appropriate challenge and supporting cooperation. The method was adopted by more than 750 of the 4100 Czech schools on the primary and lower-secondary level, as well as in a range of alternative schools and in home-schools.

All university professors who teach theoretical subjects (boring for students), are challenged to make an abstract subject for non-theoreticians (not central to their field of study), specially, although available Czech textbooks are purely technical and axiomatic, old-fashioned and non-modern. They have much success in motivating students to learn theory in a more interesting and practical way, through concrete projects. In such way students do not dislike theoretical subjects in the field of natural sciences, they are more interested and they acquire necessary knowledge in that area. Teachers use some of the following strategies: arrive at interesting topics as soon as possible, motivate the concepts by intriguing notions through concrete practical examples, proceed from the familiar ideas to abstract terms…

Quality feedback – students

The area of the quality feedback to the educational activity was significantly changed in 2018 by modifying the quality feedback questionnaire. In 2017, a working group for evaluation of the quality of education was established. In 2018, it submitted a proposal to modify students'

evaluation. The proposal was based on state-of-the-art research works in the area of evaluating the quality of education in the university environment.

The students, therefore, anonymously answer several questions in the questionnaire regarding the education (teacher's approach, quality of lectures, educational premises, schedule, etc.) and they can also comment on it. They can point out teacher's weakly engagement in the realisation of teaching. The results are made public on the UO website, then discussed with the vice-deans for studies and then solved at individual faculties. It is the opportunity for the UO employees to get feedback, think over it, and in case of critical comments to launch a process of changes or to confirm the correctness of the content and the form of their teaching. Each evaluation is a step and effort to improve the educational activities at the UO. The evaluation result assessment from the past years has already led to a number of improvements. For instance, technical equipment of several classrooms has been renewed, there are new portal applications, courses have been innovated, and several teachers changed.

In 2018, the University of Ostrava also received feedback from its graduates through their participation in the national survey Absolvent 2018 as well as a European one – Eurograduate. The questionnaires were open for the graduates from October to December and the University of Ostrava addressed 7,997 graduates in total; graduates from 2013-2017. With respect to the time of the survey, the results were not published in 2018, which is expected in the second half of 2019.

Another target group to provide its feedback to the University of Ostrava were students of the 1st year of 2018 across all study programmes. This questionnaire survey was focused on the quality of information about the offer of study programmes at the University of Ostrava and the way how the students learned about the University of Ostrava. The survey was actively taken by 803 students of the 1st year of all study programmes (the questionnaire response rate was 23 %). The main finding was that an overwhelming majority of the students considers webpages as the key source of information about the university. Based on the questionnaire survey results, works to improve the information provided on the university website were initiated to be ready to serve the entrance examination procedure in 2019.

Quality feedback – employees

Regarding the quality feedback in the area of services for employees, the University of Ostrava held a vast survey among all employees in 2018. The survey had a form of an electronic questionnaire and it was anonymous. The response rate was 60%. The questionnaire was primarily focused on the quality of working conditions for individual groups of employees, ethical aspects, knowledge and support of the university strategy, employees' benefits, wage conditions, etc. Based on the survey results, an action plan for further steps has been prepared. The plan covered the area

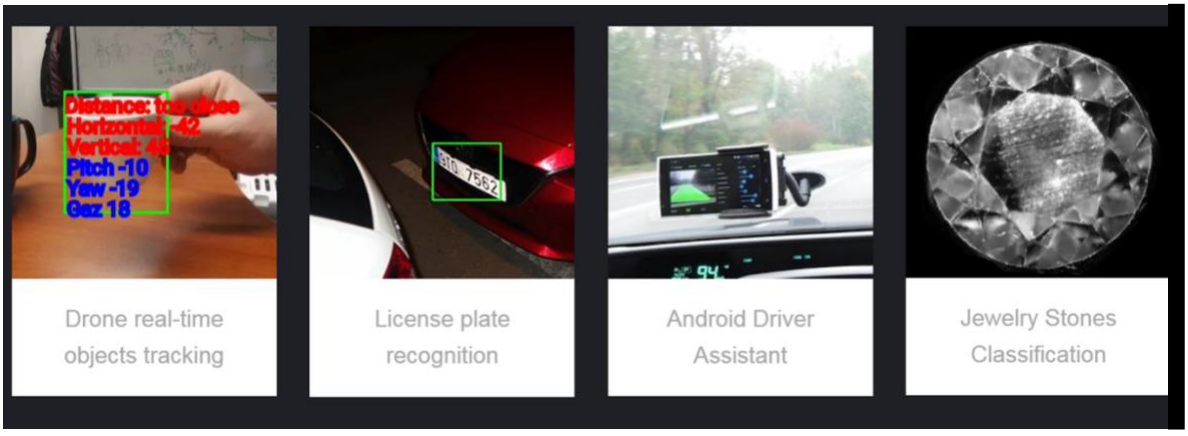
of improving the conditions for employing research staff within the preparation for HR Awards acquisition. Other measures included a proposal of a new internal wage regulation (academic and non-academic staff wage tables have been merged), finalisation of the proposal of the Career Regulation and Labour Regulation, which modified the procedure of settling conflicts between employees, etc.

Technical means for education

The full-time and distance form of studies at the UO are supported by the possibility of on-line courses (Moodle) available on the UO website. Moodle is developed as a tool enabling to realise educational methods, support easy publishing of study materials, create discussion forums, collect and evaluate electronically submitted assignments, and create on-line tests and presentations.

At the Faculty of Education, there is a new Department of ICT, which focuses on the issue of ICT in education. It deals with the area of personalised education, eLearning, multimedia, mobile devices, and social networks within the framework of being used in education. They are working with robots, planning their behaviour with applying their knowledge in physics and mathematics, predict the trajectories of SPHERO robot, work on multidissciplinary projects (biology and informatics, mathematics and physics etc.)

The approach of the pedagogues to the use of ICT in education is positive. Therefore, they support students in teamwork and actively engage them in the educational process, e.g. through student presentations and subsequent discussions.



ICT teaching supports the students in creative thinking, development of informatics thinking as well as prepares them for practice. The students are more open and communicative with their surroundings; therefore, they find the use of ICT in education interesting and entertaining.

CONCLUSIONS

This report is built based on the results of the survey for teachers and students at six Partner Countries' Universities, four Serbian Universities and two Albanian ones, and the conclusions drawn from the reports of five European Universities.

After analyzing the results, it can definitely be said that there is an urgent need for change in the PC HEI-s as far as the situation related to the process of teaching and learning is concerned. Teachers need to participate or attend training sessions and teaching conferences on methodology, pedagogy and psychology. They need to improve their use of English Language as a means of instruction, for research purposes or for their presentations in scientific conferences.

Another skill that PC University teachers need to significantly improve is the digital skills. Nowadays, the use of innovative methodology is a must as it makes communication and cooperation easier, it saves time and efforts and makes the content of the lesson more attractive and more motivating.

On the other hand, the Universities of European countries constantly invest in increasing the teaching competences by following continuous training, sometimes offered mandatorily as part of teachers' professional development and sometimes attended in the framework of self-qualification. Regarding the use of English, the staff of European universities uses English as the language of instruction in some courses, but not only. English is used by them in the framework of participation in conferences or in innovative projects that promote scientific research. As regards the use of technology in education, European countries already have a consolidated experience with courses that take place entirely online or with interactive platforms that enable ease of communication, faster and wider dissemination of information and transparency in the evaluation of assignments or examinations.

Taking into account the above conclusions, European Universities are the right institutions to support the Universities of Partner Countries with expertise in the above-mentioned fields. The transfer of knowledge and skills will provide the Universities of the Partner Countries with the opportunity to improve their teaching competencies, and consequently, increase the quality of teaching and learning. It is the duty of the TECOMP project consortium to build a detailed plan of informative and training sessions from the part of the European Universities during the life span of the project.

Based on aforementioned surveys and the reports of EU and WB institutions, the major tasks to be performed for strengthening competences of university teachers are identified. The procedures for performing this task are the following:

1. Insufficient time dedicated to class preparation leads to the dominant use of the frontal approach since it requires less preparation time, consequently, it is necessary to direct the teaching staff to use other teaching methods, providing students with a more central role.
2. It is necessary to prepare materials and workshops that highlight the challenges, possibilities, and importance of improving HI education.
3. It is necessary to organize workshops that will introduce teachers to the complexity of the teaching process and the necessity of good preparation. It is especially important to mobilize young teaching staff, that possibly spend less time working compared to their older colleagues.
4. The younger teaching staff is missing formal education and training in the field of teaching methodology that needs to be complemented through appropriate workshops and training.
5. Due to the lack of basic methodology courses, it is necessary to develop training at different levels from basic to advanced.
6. It is necessary to enhance teacher English competences and enable teaching staff to prepare and implement at least one class in English.
7. Initiative should be launched to set more stringent requirements for the appointment of lecturers.
8. Self-assessment for a significant part of the questions about the teachers' competencies indicates that improving ICT knowledge and skills in the learning process is more than necessary.
9. Given the almost uniform agreement of teachers on the importance of new technologies for the quality of teaching, we believe that teaching staff will positively react to appropriate training. It is necessary to prepare material and organize training related to the implementation of ICT in the teaching process.
10. Teachers recognize the need for ICT implementation in the teaching process and agree that it would improve the teaching process, which should be used as the main motivation for the implementation of Project activities.
11. There is a large space for remote class improvement since only 20% of lecturers use this form of teaching.
12. Hardware, software, and teaching staff skills are necessary preconditions for the improvement of the teaching process through ICT, and they should actively be worked on during the implementation of the Project.
13. Provide a wide range of training at different levels that will enable teachers to build or better their pedagogical competencies.
14. Teachers should be encouraged and taught teaching strategies that include homework, short-term assignments, or some other form of preparation for the coming time.
15. Already good communication between teachers and students should be expanded by including remote communication through different platforms.

16. Improvement of classes oriented on students' needs, their motivation for studying and their critical thinking, as well as outcome achievement, and thus eliminate current disagreements on the teaching process between lecturers and students.

University of Niš

The TeComp Consortium

www.tecomp.ni.ac.rs
e-mail:
tecomp@ni.ac.rs
tecomp.p2018@gmail.com

Co-funded by the
Erasmus+ Programme
of the European Union

This project has been co-funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein