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

REPORT ON THE WORK PACKAGE 2

Upgrading educational infrastructure at the PC HEIs

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 Niš
Coordinator:	Prof. dr. Jelena Ignjatović
Project duration:	15.11.2018. – 14.11.2022.
Work package:	**WP2 – Upgrading educational infrastructure at the PC HEIs**
Lead organization of WP4:	P4 – UNIKG
Version of the document:	v.03
Status:	Final
Dissemination level:	Internal

The aim of the WP2 is to harness the potential of recent and continuing developments of ICT in the service of high-quality education at the PC HEIs by upgrading their educational infrastructure. The work was organized through 4 specific tasks:

2.1. Forming technology-enhanced learning spaces,
2.2. Preparing material for PPM training courses,
2.3. Creating material for providing language support for teaching staff,
2.4. Preparing guidelines for the technological enhancement of teaching and learning.

Task 2.1 activities – Upgrading educational infrastructure

Aim of Task 2.1 activity was procurement of equipment which will enable creation of technology-enhanced learning spaces. In this activity the technical infrastructure and laboratory equipment for educational purposes of the PC HIEs have been purchased and installed. First, the provisory equipment specification given in the project application as the need of the PC universities, was revised by TeComp team members (IT experts from each partner institution) and discuss on kick-off meeting (January 2019). This work started simultaneously with comparative analysis and identification of needs in WP1. The final decision about the purchase of equipment were made at the partners meeting in Oviedo (March 2019). The equipment and other materials which have been made possible through tendering with TeComp project funds enabled the project team members to successfully work towards the project objectives. The equipment was selected following two basic objectives:

- Creating a learning spaces for conducting and developing online lectures with students and for staff training purposes.
- Providing the necessary infrastructure for the project team activities on the framework of the TeComp project. The ongoing period of the project requires the commitment of its staff in the training, preparation and daily collection of materials needed for the development of online lectures according to the best practices of European universities project partners on the TeComp.

Separate tender procedures for the Serbian and Albanian partner institutions have been carried out. After the completion of tender procedures, partner universities organized installation of video conference rooms and Lifesize accounts were registered. Those VCRs was used for organising on-line meetings, collaborations, and workshops, during the project activities. Also, other equipment for modernisation of classrooms and laboratories at the PC HEIs have been purchased. Technology-enhanced learning spaces enabled the use of innovative teaching and learning methodologies during and after the project life. Specially, purchased and installed equipment was very important and helpful having in mind COVID pandemic and that almost two years teaching and learning process have been conducted online.

Each of the Serbian universities wrote the report about the purchased and installed equipment with the details about its placement and usage. Two Albanian universities wrote the similar but joint report.

UNI (P1) - Procurement and usage of the equipment funded by TeComp project

University of Niš carried out two public tender procedures for the procurement of the electronic equipment. The first was join tender procedure for procurement of the electronic equipment for all four Serbian universities (there were 4 lots). Preparation activities and tender procedures were finished within the deadline, during March-July 2019. Equipment has been delivered during autumn 2019 and installed at the universities. The second was tender procedure for procurement of additional electronic equipment for University of Niš. The procedure was done within the deadline, during November-December 2019. Equipment has been delivered and installed before the end of 2019.
For both tenders the whole amounts ware paid to the contractor excluding VAT since equipment was exempted from VAT by the decision of the Serbian tax regulatory body. During whole process no challenges were faced.

Following equipment was purchased from the funds of TeComp project for the University of Niš.

#	Type of equipment	Specification	Quantity
1	Video conferencing system	LifeSize Icon 600 - 10xoptical PTZ camera, Phone HD, Dual display, 1080p - LifeSize Icon 600-DSS-1 yr - LifeSize Small Account - 1 yr	1
2	Interactive monitor	Ctouch LASER SKY 55" 4K UHD	1
3	Video projector	VIVITEK DH268; VIDEO-PROJECTOR DLP Tehnology; Resolution Full HD 1920x1080 (16:9); 3500 ANSI Lumens; 15000:1 Contrast	2
4	Document Camera	Document Camera Epson DC21	8
5	Desktop computer	CPU AMD Ryzen 7 8C/16T 2700 (4.1GHz, 4MB, 65W, AM4) Gigabyte AMD MB GA-A320M-H 1.1 AM4 SP512GBP34A80M28 SSD Silcion power DDR4 16GB 3200MHz Patriot Viper Steel Series PVS416G320C6 Gigabyte NVD GT 710 2GB DDR3 64bit GV-N710D3-2GL 2.0 Zeus K101 600w WIN PRO 10 OLC OA3 FQC-08797 Monitor: Philips LCD 23.8" 243V7QDAB IPS Panel Full HD VGA, DVI, HDMI, Speakers	20

6	Desktop computer	CPU AMD Ryzen 7 8C/16T 2700 4.1GHz, 4MB, 65W, AM4 Gigabyte AMD MB GA-A320M-H 1.1. AM4 Kingston SSD KC2000 500GB M.2 2280 WIN PRO 10 OLC OA3 FQC-08797 SKC2000M8/500g Gigabyte NVD GT 710 2GB DDR3 64bit GV-N710D3-2GL 2.0 Memory DDR4 16GB 3200MHz Patriot Viper Steel Series PVS416G320C6 Zeus K101 600W Keyboard and wireless mouse Monitor Philips LCD 23.8" IPS Panel Full HD VGA, DVI, HDMI, Speakers	3
7	Laptop computer	Lenovo Yoga C940-14IIL 81Q9003XYA i7-1065G7 16GB 1TB 14"	1
8	Laptop computer	Lenovo Yoga C940-15IRH i7-9750 15"	1
9	Laptop computer	HP NOT SPE X360 15-EBOO43NA I7 16G512 1650Tl W10H	1
10	B&W printer	Konica Minolta Bizhub 227; 1xDF-628; A5-A3; 600 x 600 dpi (copy, scan, fax) 1800 x 600 dpi (print)	1
11	Color printer	Konica Minolta Bizhub C227; 1xDF-628; A5-A3; 600 x 600 dpi (copy, scan, fax) 1800 x 600 dpi (print)	1
12	B&W printer	HP LaserJet Pro MFP M130a	3
13	Memory	DDR3 169b for Dell PowerEdge R320	2
14	Memory	16GB 2Rx4 1.5V PC3-14900 CL13 DDR3 1866Mhz RDIMM ref	2
15	Speakers	JBL CHARGE 4 BLACK	1
16	Hard disk drive	IBM 1TB 2.5" 7.2K RPM SGb SAS NL	3
17	LifeSize licence renewal	Lifesize Icon 600 LAMS (1-year)	4
18	LifeSize licence renewal	Lifesize Host Plus (Qty10 Minimum)	10

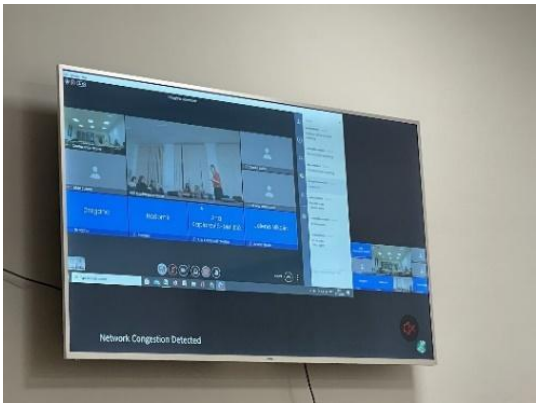
Usage of the equipment

The video conferencing system (1) is used for video conferencing meetings as well as for various online lectures. The system is mobile, it can be used in various locations, so it is not fixed in a specific room. Figures 1-4 show the use of video conferencing equipment in TeComp pedagogical training of teaching staff.

The interactive monitor (2) is set up in the ceremonial hall of the Faculty of Sciences and Mathematics of the University of Niš (FSMUNI), which is used for the defense of master's theses and doctoral

dissertations, as well as for teaching at all levels of studies and for meetings. Video projectors (3) are portable and are used for teaching in class-rooms without video projectors installed.





Figures 1-4. The use of video conferencing equipment in
TeComp's pedagogical training of teaching staff

Document cameras (4) are distributed to all departments of FSMUNI and are used in teaching. The cameras have adapters for classical microscopes and are particularly useful in teaching where such microscopes are used, such as teaching at the Department of Bio-logy and Ecology.

Desktop computers (5) are installed in the computer laboratory (see Fig. 5-6) and are used for teaching at all departments of FSMUNI, mostly at the Department of Computer Science.

Desktop computers (6), laptop computers (7-9) and printers (10-12) are used for per-forming tasks related to project administration and management, as well as for the preparation of teaching and training materials.


Figures 5-6. Computer laboratory at FSMUNI

Memories (13-14) and hard disk drives (16) were purchased to enhance the web servers hosting the project website, the project administration platform, and the LearingKey platform, while speakers (15) were purchased as an add-on to the video conferencing system.
Due to the extension of the TeComp project, caused by the Covid 19 pandemic, the license for the LifeSize video conferencing system expired before the end of the project, so it was extended for another year (17-18).

Equipped	Number
Video conference rooms installed	1
Experimental Science Laboratories	5
Computer Science Laboratories	1
Classrooms	1

UB (P2) - Procurement and usage of the equipment funded by TeComp project

In October 2019, the University of Belgrade received equipment purchased under the TeComp Erasmus+ project. The equipment was purchased at a public tender organized by University of Niš, within the lot 2. After delivery, the equipment was forwarded to the faculties participating in the TeComp project, about which minutes were made and the installed equipment was marked in the appropriate way and entered in the register of equipment of appropriate institutions. The purchased equipment and its distribution by institutions are shown in the table below. Also, in the attached photos one can see the listed equipment in a real environment and work with students.

No.	Code	Item	Pcs	Location
1	A1900059	LifeSize Icon 600-10xoptical PTZ	1	Faculty of Physics
2	DH268	Video projektor VIVITEK DH268	3	Faculty of Physics (1pcs), Faculty of Biology (2pcs)

3	A1900063	Skener dokumenta Document	1	Faculty of Physics
4	A1900070	Desktop računar sa softverom i	1	University technical service
5	A8P79A	Štampač HP LaserJet Pro M521dn	2	University technical service
6	RB3011UIAS-	Router Mikrotik RB3011UiAS-RM	2	University technical service
7	HX-M401TCB-	MAXTOR eks. HDD M3 Portable,	2	University technical service
8	SA400S37-	SSD SATA3 480GB Kingston A400	2	University technical service
9	A1900069	SONV 105-LUMEN WVGA DLP PICO	1	Faculty of Mathematics
10	EB-1780VV	Epson Europe WXGA Portable	1	Faculty of Mathematics
11	EH-LS100	EPSON Projektor Ultra Short	1	Faculty of Mathematics
12	MV962ZE-A	MacBook Pro 13" Touch Bar/QC i5	1	Faculty of Mathematics
13	MJ1K2ZM-A	Apple USB-C Digital AV Multiport	1	Faculty of Mathematics
14	MJ1L2ZM-A	Apple USB-C VGA Multiport Adapter	1	Faculty of Mathematics
15	MUU32HC-A	Apple iPad mini 5 Wi-Fi 256GB -	1	Faculty of Mathematics
16	MK0C2ZM/A	Apple Pencil	1	Faculty of Mathematics
17	MKLV2ZM-A	Apple iPad mini 4 Smart Cover	1	Faculty of Mathematics
18	J9772A	HPE Aruba 2530 48G PoE+ Svvitch	1	Faculty of Mathematics
19	SMT3000RMI2U	APC SMT3000RMI2U, SMART RM	1	Faculty of Mathematics
20	BX1400U-GR	APC, Back UPS 1400VA/700W	1	Faculty of Mathematics
21	DS118	SYNOLOGY NAS DiskStation DS118	1	Faculty of Mathematics
22	WD40EFRX	HDD WD 4TB SATA III, 64MB, 3.5",	1	Faculty of Mathematics
23	4NU26EA	HP 290 G2 Microtovver PC IC i7-8700	1	Faculty of Mathematics
24	U2518D	Dell U2518D UltraSharp, IPS, 16:9,	1	Faculty of Mathematics

25	7510-109	Jabra SPEAK™ 510 MS	1	Faculty of Mathematics
26	D000802	WEB CAM LOGITECH C920 15Mpix	1	Faculty of Mathematics
27	1127244	STAR 63 Foto video stativ sa torbom	1	Faculty of Mathematics
28	BK-3MCCE-	PANASONIC Eneloop baterija AA	2	Faculty of Mathematics
29	SM-	Samsung T830 Galaxy Tab S4 WiFi	1	Faculty of Mathematics
30	EJ-	Galaxy Tab S 10.5" Book Cover	1	Faculty of Mathematics
31	MIS01237	LOGITECH MX Anywhere 2 Meteorite	1	Faculty of Mathematics
32	43-401-BKG	Knomo SOUTHAMPTON Backpack	1	Faculty of Mathematics
33	A1900073	NIKON ECLIPSE E100 LED MV R	11	Faculty of Biology
34	A1900075	HARD DISK HD SAS 12G 1.2TB 10K	1	University technical service
35	A1900076	HARD DISK 4TB 3.5" SATA LFF 7.2K	1	University technical service
36	99MO084203	Moshi USB-C to Gigabit Ethernet	1	Faculty of Mathematics

Usage of the equipment

Faculty of Mathematics received video and interactive projectors, web cameras, laptops in our classrooms, as declared by the abovementioned table. From October 2019 till June 2022, blended learning enrollment is growing in the Faculty of Mathematics. Our world of education has been transformed and improved by using the purchased equipment and its distribution to our classrooms. We have used the supplied equipment:

- in regular online courses Methodology of teaching mathematics and computer science as well as the following courses: Educational Software and Introduction to Interactive Proof of Theorems.
- for online lessons presented to a small group of students that were present in the classroom (due to Internet problem at student hostels)
- for monitoring online competition (2020 - International Science Olympiads: IMO, IOI, JBMO, EJOI,
- for monitoring live competition (2022 – SMO (Serbian Mathematical Olympiad))
- for live scoreboard during science Olympiads and training.

Advantage of the purchased equipment are numerous. For example, this equipment offer decent picture quality and go-anywhere flexibility. Besides, getting on the video to deliver announcement and

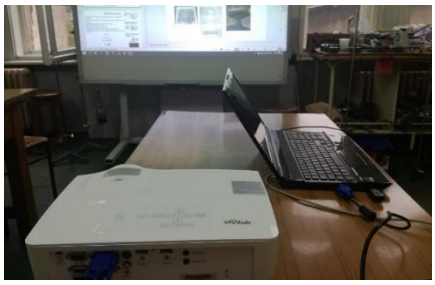
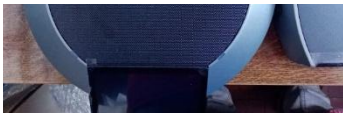
clarification (during online competition and online courses) creates a much higher level of engagement and contentedness with participants and colleagues compared to just communicating obligatory content via text, audio, PDFs or slides for example. Video and interactive projection systems added another lever to the learning process and competition environment. Moreover, blended learning and BYOD (Bring Your Own Device) is much easier with a projector. This allows for visual demonstrations of new concepts and also lets students access the information for independent study since it can be made available online. For example, for computer science, mathematical and astronomy students, 3D visualization (planet system, complex architecture, ...) is much easier to understand through visuals on the screen rather than seeing it on a 2D textbook. It also saves the teacher's time, as it doesn't require them to write everything on the board. At the end, to understand the impact of interactive projectors on the teaching-learning process, it is important to consider their role in productivity. Interactive video classroom projectors eliminate distraction for the students and competitors from empty silent moments, noisy announcement and clarification, consequent tendency to speak to, and disturb other students, competitors and participants. With an interactive projector, a live scoreboard and live announcements can be planned thanks to the already available presentation material. Enthusiastic professors and jury members could also involve participants as teaching assistants in coordinating such lesson plans thus taking student engagement to a new level. Human connection is critical in any human interaction, and in the online world, the next best thing to being in person is to look directly into the eyes of your viewer – through the camera lens during medal distribution or live stream competition.



Figures 7-10. Equipment at Faculty of Mathematics University of Belgrade

As part of the TeComp Erasmus+ project, the Faculty of Physics was provided with the following equipment: a video conference LifeSize Icon 600-10xoptical PTZ, a video projector VIVITEK DH268 and a document scanner Document Camera Epson from the equipment. The equipment is placed in the space which pertains to the Sub-department of Teaching Physics, which organizes and implements eduaction of future physics teachers in primary and secondary schools. In the classrooms and laboratories of the Sub-department, classes in several subjects are realized, and the obtained equipment is used in the realization of classes. Some of the course are: *Methodology of Teaching Physics 1* and *Methodology of Teaching Physics 2*, attended by 3-15 students per year; *Teaching Tools in Physics* 1, Teaching *Tools in Physics* 2 and *Teaching Tools in Physics* 3 are courses attended by 5-15 students per year; Modern *Teaching Tools* attended by up to 5 students per year; *Pedagogical Research in Physics* and *Applied*

Methodology of Teaching Physics attended by 3-6 students per year; *Education Standards* attended by up to 5 students per year. Since some of the listed courses have an experimental part, it was important, especially in pandemic conditions, to be able to show remotely what the teacher and assistant are doing in the laboratory. The video conference enabled the active participation of students in setting hypotheses, analyzing the outcome of experiments, as well as analyzing and discussing the results obtained. Also, the equipment enabled real-time broadcasting of complete lectures from the classroom space. The Document Camera, in addition to the basic purpose of scanning documents, has the role of a projector in the Laboratory for Methodology of Teaching Physics. Namely, certain demonstration experiments, which are the basis of the courses *Teaching Tools in Physics* 2 and *Teaching Tools in Physics* 3, are projected on the screen and thus become clearly visible to all present students. Since the equipment was obtained just before the covid-19 pandemic, its role was immediately tested. It turned out that it significantly contributed to the quality of teaching realized in the previous period. We intend to continue to use it and thus further point out to students the importance of developing digital competencies in modern education.


Figures 11-13. Equipment at Faculty of Physics, University of Belgrade

As for the Faculty of Biology, that University member has taken over eleven NIKON Eclipse microscopes, as well as two Vivitek video projectors. The mentioned equipment was installed in the classrooms of the Institute of Zoology and the Institute of Botany. Immediately after the installation, the equipment began to be used in teaching from several undergraduate courses for students of all study groups of the Faculty of Biology. First, a group of young teachers and assistants were trained to work with equipment, and then they used this knowledge to improve the quality of teaching in the subjects they teach. In addition, these same young teachers partly participated in workshops that were later organized as part of the TeComp project activities, so that they integrated the newly acquired knowledge and purchased equipment in the most efficient way possible to modernize and improve their subjects. Materials obtained through the use of equipment were used both for classroom instruction and for online activities imposed by the pandemic. By disseminating the knowledge and skills acquired by participating in the TeComp project, as well as the use of the equipment itself, it is estimated that more than 20 teachers and more than 500 students directly benefited from the implementation of the TeComp project in the previous period. Thus, various activities of the TeComp project have significantly contributed to the improvement of teaching competencies of teachers and associates employed at the Faculty of Biology, as well as the quality of teaching. As the acquired equipment remains functional and modern, the plan is to further spread the knowledge and skills acquired through participation in the project

among new young teachers and associates, so that in the future even more students will benefit from the project, in the period after the project is completed.

Figures 11-13. Equipment at Faculty of Biology, University of Belgrade

Equipped	Number
Video conference rooms installed	1
Experimental Science Laboratories	2
Computer Science Laboratories	1
Classrooms	3

UNS (P3) - Procurement and usage of the equipment funded by TeComp project

In November 2019, the University of Novi Sad received equipment purchased under the TeComp Erasmus + project. The equipment was purchased at a public tender within lot 3. After delivery, the equipment was forwarded to the Faculty of Science participating in the TeComp project. The installed equipment was marked in the appropriate way and entered into the register of equipment of appropriate institutions.

The equipment purchased, delivered, and used by the UNS is listed in the following tables.

Institution	**Faculty of Sciences**		
Type of equipment:	**Serial number:**	**Inventory number:**	**Location (building, room):**

Video conference equipment LifeSize Icon 600-10xoptical PTZ	SSG6E260B9D408	119557	Department of Mathematics and Informatics, classroom 15
Video projector VIVITEK DH976-WT	WDH976-WT851000	119558	Department of Mathematics and Informatics, classroom 61
Video projector VIVITEK DH976-WT	WDH976-WT851000	119559	Department of Mathematics and Informatics, classroom 63
Video projector VIVITEK DH976-WT	WDH976-WT851001	119560	Department of Mathematics and Informatics, classroom 64
Video projector VIVITEK DH976-WT	WDH976-WT851012	119561	Department of Mathematics and Informatics, classroom 65
Desktop computer WBP Ryzen 7 with Philips LCD 23.8“ monitor	SN9WBO7923, SN9WBO7925, SN9WBO7930, SN9WBO7933, SN9WBO7941, SN9WBO7945, SN9WBO7947, SN9WBO7948, SN9WBO7960, SN9WBO7965	119576-119585	Department of Mathematics and Informatics, classroom 15
Desktop computer WBP Ryzen 7 with Philips LCD 23.8“ monitor	SN9WBO7966, SN9WBO7967, SN9WBO7970	119588-119590	Department of Mathematics and Informatics, classroom 16
Desktop computer WBP Ryzen 7 with Philips LCD 23.8“ monitor	SN9WBO7982	119586	Department of Mathematics and Informatics, classroom 13
Desktop computer WBP Ryzen 7 with Philips LCD 23.8“ monitor	SN9WBO7984	119587	Department of Mathematics and Informatics, room 35
Printer HP Color Laserjet Pro MFP M479fdn	CNBMM5H3TS	119562	Department of Mathematics and Informatics, classroom, new part office 12
Printer Laser A4 Xerox Phaser 3610v DN	3373452920	119563	Department of Mathematics and Informatics, classroom, new part office 12

Institution	**Center for information technologies**

Type of equipment:	Serial number:	Inventory number:	Location (building, room):
Desktop computer WBP with Acer monitor LCD 23.8”	SN9WBO7597	119569	The central building of University of Novi Sad office SU-14
Multifunctional printer HP LaserJet M428fdn MFP	CNBKM4J25K	119571	The central building of University of Novi Sad office I-2
Laptop case Apple smart cover for the model 10.5” iPad AIR 3	DQDY90UNM7C7, DQDY9159M7C7, DQDY9KOZM7C7	119572-1 19574	The central building of University of Novi Sad office I-2

Moreover, some laptops and a tablet are purchased and used for project management and administration, as follows:

Number	Description	Number of items	Location
1	Laptop Lenovo YOGA C940-14	3	dr Andreja Tepavcevic and dr Zorana Luzanin, Faculty of Sciences, DMI new part office 12/II floor Djurica Salamon, Faculty of Sciences DMI ground floor, office 12
2	Tablet SAMSUNG Galaxy Tab S4 10.5 64GB	1	dr Andreja Tepavcevic Faculty of Sciences, DMI new part office 12/II floor

Usage of the equipment

From November 2019 to November 2022, equipment was extensively used as a part of the infrastructure for blended learning spaces, providing both students and teachers with better support. It was used for planned project activities and for project administration.

- By teachers in performing remote labs, recording video lectures, and conducting mixed live and online lectures for students who participated from their homes.
- By students who had Internet problems and were unable to participate in online lessons
- By students enrolled in the methodology of teaching courses where they were expected to use ICT in creating their lesson plans and materials.
- By participants of training organized within TeComp project activities

The videoconference system Life Size Icon 600-10oxoptical with PTZ camera is in the classroom 15 and the computers are also in the same classroom. Classroom 15 is being used to connect to the joint

meetings with other project partners and to connect to the workshops and courses held in other universities. Besides, they are also used for classes in which part of the participants are face-to-face and part online. A number of the computers are also in classroom 16. This is a small classroom where lectures on doctoral studies and small seminar lectures are being organized. Programs for doctoral studies in the Methodology of Mathematics, Informatics, and Natural Sciences are being changed, introducing new teaching methods under the TeComp project and accreditated.

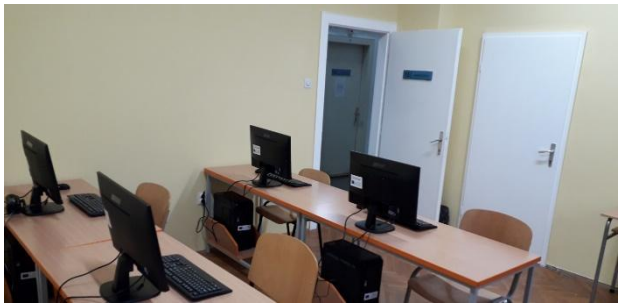
Further, 4 video projectors are being used for teaching in the classrooms. They are being used for the courses in which the new methods are introduced and that are being held with a smaller number of students while other students are following online. These projectors are planned to be used for the lectures and tutorials in the Department of Mathematics and Informatics and the Department of Physics.

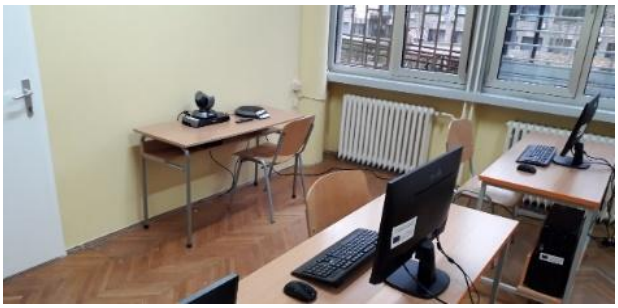
The rest of the equipment is being used for the project administration (in the Rectorate building) and for the project administration in the Faculty of Science, Department of Mathematics and Informatics (computers, laptops, and printers). A tablet and laptop computers are being used for project meetings by Andreja Tepavcevic, Zorana Lužanin, and Djurica Salamon.

After the end of the project, this equipment will be used in permanent meetings with project partners (cooperation in organizing courses in methodology in teaching and learning for young teachers), and also for regular lectures and tutorials in study programs in Mathematics, Informatics, and Physics and also in the study program in Doctoral studies in the methodology of teaching Mathematics, Informatics, and Natural Sciences.

Photos of equipment in a learning environment

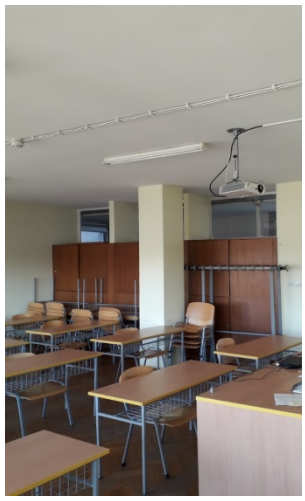
In this section, one can see photos of the listed equipment in a real environment and work with students. The listed equipment is distributed in several laboratories.





Figures 14-17. Desktop computers and lifesize system are placed in the same classroom

Figures 18-22. The printers and some laptop computers are used by project team members

Figures 23-24. The video projectors are placed and used in 4 different classrooms for using new methods of teaching

Equipped	Number
Video conference rooms installed	1
Experimental Science Laboratories	0
Computer Science Laboratories	1
Classrooms	4

UNIKG (P4) - Procurement and usage of the equipment funded by TeComp project

In October 2019, the University of Kragujevac received equipment purchased under the TeComp Erasmus + project. The equipment was purchased at a public tender organized by University of Niš, within the lot 4. After delivery, the equipment was forwarded to the Faculty of Science and University technical service. The installed equipment was marked in the appropriate way and entered in the register of equipment of appropriate institutions.

The equipment purchased, delivered, and used by the UNIKG is listed in the following table.

Type	Specification	Quantity	Location
Document camera scanner	Document Camera Epson DC-21	2	Faculty of Science
Video conference equipment	LifeSize Icon 600-10xoptical PTZ	1	University technical service

Desktop computer	PC 4.1GHz 16GB/512GB + Monitor Philips 23.8”	35	Faculty of Science
Video projector	VIVTEK DH976-WT	2	Faculty of Science

Usage of the equipment

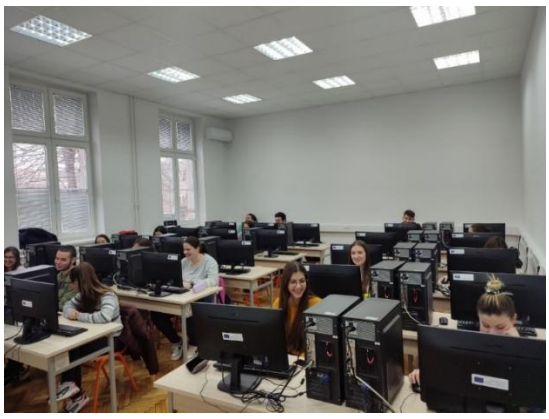
From October 2019 equipment was extensively used as a part of infrastructure for blended learning spaces, providing better support for both, students and teachers. It was used:

- By teachers in performing remote labs, recording video lectures, conducting mixed live and online lectures for students who participated from their homes;
- By students who had Internet problem and were unable to participate online lessons from at student hostels;
- By students enrolled in methodology of teaching courses (Methodology of teaching mathematics, Methodology of teaching informatics, Methodology of teaching programming, Methodology of teaching physics, Methodology of teaching chemistry, Methodology of teaching biology) where they were expected to use ICT in creating their one lesson plans and materials;
- By participants of trainings organized within TeComp project activities.

Photos of equipment in learning environment

In this section one can see photos of the listed equipment in a real environment and work with students. Listed equipment is distributed in several laboratories.

- Desktop computers are placed in two computer science laboratories.




Figures 25-26. Desktop computers placed in computer science laboratory 1


Figures 27-28. Desktop computers placed in computer science laboratory 2

- Document cameras are placed in two laboratories


Figures 29-31. EPSON camera in llaboratory for botanic


Figures 32-33. EPSON camera in llaboratory for STEM education

- Video conference equipment is placed in University's computer center and is disposable to staff members

Figures 34-35. Video conference equipment

- One video projector is placed in laboratory and the other is in the Computer center of Faculty of Science (disposable to staff members)

Figures 36-37. Two video projectors

Equipped	Number
Video conference rooms installed	1
Experimental Science Laboratories	2
Computer Science Laboratories	2
Classrooms	2

ECUG (P5) and UNIKO (P6) - Procurement and usage of the equipment funded by TeComp project

Gjirokastra University carried out a national joint procedure for the procurement of the electronic equipment during January-April 2020. The procedure was done within the deadline, equipments have been delivered and installed at the University of Gjirokastra and the University of Korca and the whole amount was paid to the contractor including VAT, since this is obligatory by law in Albania. No challenges were faced.

List of equipment and specifications is given in the following table.

TeComp-University of Gjirokastra		
Type of equipment	**Specifications**	**Quantity**
Smart Board Interactive Display	Smart Board Interactive Display, SmartBoard nga ViewSonic, IFP5550-2EP.	1
Projector with interactive whiteboard functionality	Epson Video Projector EB-685Wi, Resolution 1280 x 800, 3500 ANSI lumens V11H744040	1
Smart TV 50"	Samsung Smart TV 50" 4K Ultra HD 3840 × 2160p, WiFi, DVB-T2C, 2 x HDMI, 1 x USB, Series 7, Black, UE50NU7022KXXH	1
Visualiser or document camera	Visualiser or document camera, Epson ELPDC21 Full HD 1080p Document Camera	1
USB laser pointer	Logitech Wireless Presenter R400 910-001356	3
Laptop Computer Brand, CPU I5, RAM 8GB, HDD1TB	HP ProBook 470 G5 Notebook PC, Intel Core i5-8250U up to 3.40GHz, 17.3" FHD 1920 x 1080p, 8 GB 2400 MHz DDR4, 1 TB 5400 rpm, Intel UHD Graphics, No DVD, Windows 10 Home, 3-CELL, 3GH40EA, 1Year	8
Desktop Computer with monitor	HP 290G2 Microtower PC + Monitor 20.7" V214a, Intel Core i5-8500 up to 4.10 GHz, 8 GB DDR4-2666Mhz, 500 GB 7200 rpm HDD, DVD+/-RW, Intel UHD Graphics, Keyboard + Mouse, Windows 10 Professional, 3ZD14EA, 1Year	2
Printer Scaner Copier	xerox B7030B 7001V_D B7000 Base Unit (520-shttray) 097S04900 B7000 30ppm Init Kit B7001KD2 B7000 Nat Kit 497K17740 B7000 HDD	2
Portable projector	ASUS ZenBeam GO E1Z Projector, 150 Lumen, Gold 90LJ0080-B01520	3
External HDD 1Tb	Verbatim Store n Go Portable USB 3.0 Hard Drive, 1TB 53194	5
WiFi IP camera	WiFi IP camera (1 item) Dahua 1/2.7” 2 Megapixel progressive CMOS 2MP (1920 x 1080) Night Vision: 10m(33ft) distance 3.6mm fixed lens Field of View: 90°(H), Video Compression: H.264 Up to 15fps Frame Rate 8x Digital Zoom Two-way Audio Wi-Fi: IEEE802.11b/g/n, 50m open field Micro SD	1

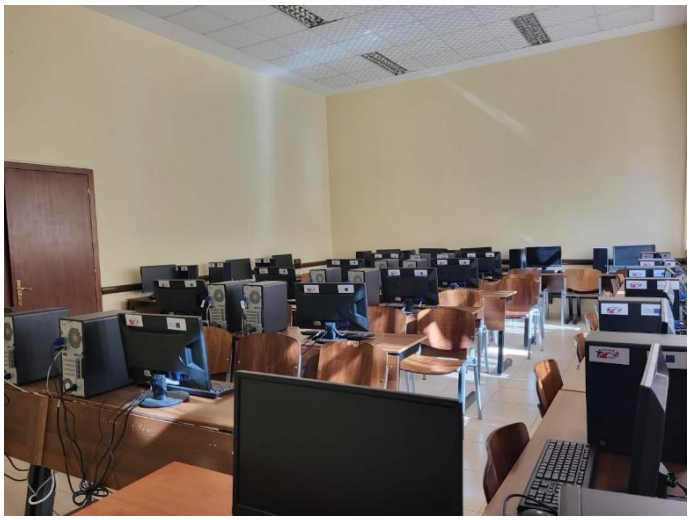
	Slot (up to 64GB) DC 5V2A Power supply Power Consume: <7W	
Digital camera for showcasting work and evidence trails	Digital camera for show casting work and evidence trails (1 item) Canon EOS 4000D DSLR Camera + EF-S 18-55 mm, 18 MP, AF Points, 3fps Shooting, Full HD Video, WiFi, SD/SDHC/SDXC Card Slot, Touch Screen 2.7" TFT LCD	1
USB WiFi	USB WiFi (3 items) TP-Link 300Mbps Wireless, USB, TL-WN821N	3
Tablet	Lenovo Tab 4 8, 8.0" IPS 800 x 1280p, Snapdragon 425 Quad-Core up to 1.4 GHz, 2 GB RAM, 16GB Flash, WiFi, 4G/3G, BT, 2MP Front/5MP Rear Camera, Battery 4850 mAh, Android 7.1.1, Black, ZA2D0015BG	8

The electronic devices and other materials which have been made possible through tendering with the funds of the TeComp project as well as those made available by the University of Gjirokastra, will make it possible for the project team to successfully achieve its objectives. The equipment has been selected following two basic goals approved at the meeting of project coordinators in Novi Sad (January 2020):

- Structuring and implementing a successful online model classroom for lectures, for the training of the academic staff and further project purposes, for the successful completion of the project and to deploy this model classroom to the university for the daily process of online teaching.
- The equipment will contribute to the successful implementation of TeComp project. During the period of implementation of this project the staff needs to be trained to effectively use the collection of the online materials, necessary to educate European students through the practices of the European Universities which are partners at TeComp project.

For the structuring of the model classroom, the best models consulted with the project partners during meetings and observations in the partner European universities were used. For the complete creation of the model classroom, the TeComp project team of the University of Gjirokastra, in addition to the equipment provided by the TeComp project fund, has made available: the classroom, a table that is suitable for running online classes, 10 sets for students (table + chairs, "Learning-resources and software"), two desks for the placement of desktop computers, the necessary materials for the installation of the equipment in the model class as well as technical staff for the placement and installation of the equipment in the model class premises.

Figures 38-41. Photos of the equipment in University of Gjirokastra




Figures 42-43. Photos of the equipment in University of Korce

Usage of the equipment

Actually, the equipment procured in the framework of TeComp are used by our invited American professors who work with students of the Department of Foreign Languages and the Faculty of economics. They are also using the equipment to hold dedicated classes to students who are selected to be part of exchange programs in collaboration with other Universities or companies.

Equipped	Number
Video conference rooms installed	0
Experimental Science Laboratories	0
Computer Science Laboratories	1
Classrooms	2

SUMMARY FOR TASK 2.1

Title	Universities equipped with technology-enhanced learning spaces	
Type	☐ Teaching material ☐ Learning material ☐ Training material	☐ Event ☐ Report ☒ **Service/Product**
Achieved goals	For Serbian and Albanian universities appropriate equipment for educational purposes was purchased and installed. This resulted with upgraded technical	

	infrastructure and laboratory equipment, and enabled technology-enhanced learning spaces. Total numbers are: • 4 video conference rooms were installed, • 9 experimental science laboratories were quipped, • 6 computer science laboratories were quipped, • 12 classrooms were quipped.
Conclusion	Aims are completely achieved.
Sustainability	Purchased and installed equipment ensures long term sustainability of achieved project results.

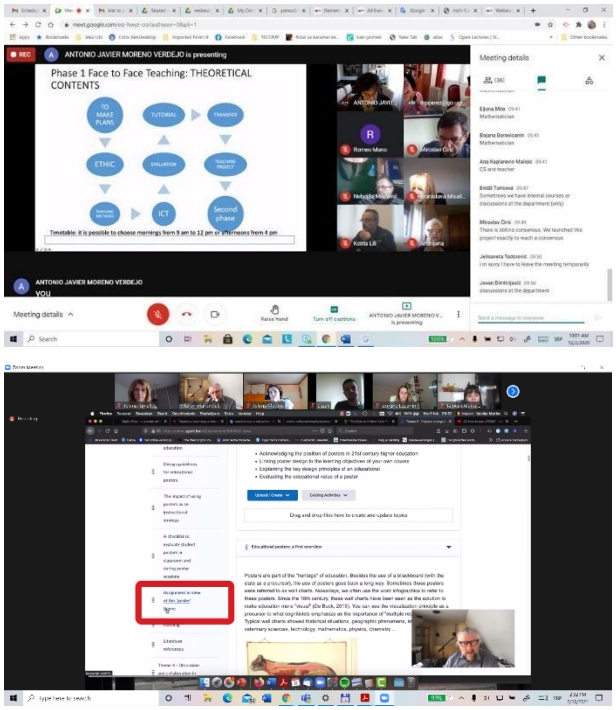
Task 2.2 activities – Preparing material for PPM training courses

Aim of Task 2.2 activity was preparation of printed and electronic material for psychological, pedagogical and methodological (PPM) training courses.
Task brainstorming, collecting ideas and drafts for training and training materials started in the first year of the project initiated with findings in reports of WP1 and experiences collected during visits of partners in EU in year 2019.

Figures 44-45. Photos of the visit to Matej Bel University in Banská Bystrica, Slovakia

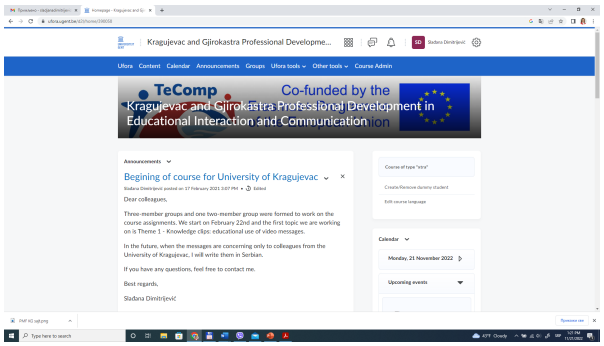
Figures 46-47. Photos of the visit to University of Ostrava, Czech republic

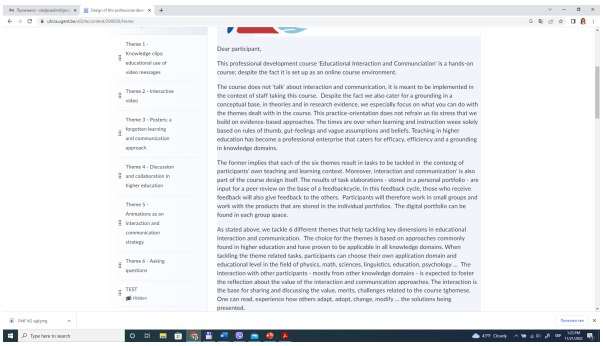
UNIKG as a WP2 leader worked on plans of activities and first drafts of teaching and learning materials in 2019. Because of COVID pandemic in year 2020 all planed visits to the partners from EU were postponed. Instead of that, and after the eligibility period of the project extended by 12 months, partners from UGR and UGENT conducted webinars in December 2020 and in February 2021.



Figures 48-49. Photos of the webinars prepared by University of Granada, Spain, and University of Gent, Belgium

Also, in spring 2021 UGENT conducted online 12-week (45 hours) course the professional development course “Educational Interaction and Communication in Higher Education”.





Figures 50-51. Course "Educational Interaction and Communication in Higher Education" on UFORA platform

After those trainings partners from Serbia begun to work intensively on preparation of the material for PPM training courses, as well as guidelines for the technological enhancement of teaching and learning.

In order to optimize publishing process, at online CMT held on 22nd March 2021, coordinators agreed to form Editorial board for training material related to activity 2.2 and 2.4. Elected members of Editorial board were:

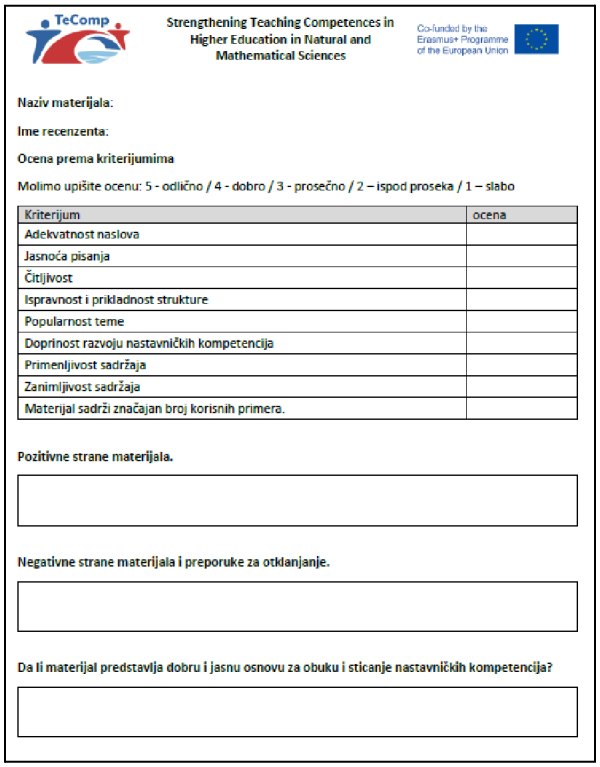
1. Zorana Lužanin (UNS) president,
2. Miroslav Ćirić (UNI),
3. Andrijana Zekić (UB),
4. Siniša Đurašević (UB),
5. Slađana Dimitrijević (UNIKG).

The Editorial board was entrusted with the management of the process of collecting and reviewing teaching materials, as well as the selection of materials for printing and the design of volumes.

Draft versions of teaching and learning materials, each of them in Serbian and in English, were collected till LCM in Kragujevac in June 2021. At that meeting Editorial board defined review process and schedule of activites. During the summer 2021 review process was ended. Reviewers for individual themes were TeComp team members from UB, UNS, UNI, UNIKG. There were involved 3 males and 3 females:

1. Miroslav Ćirić,
2. Siniša Đurasinović,
3. Miroslav Marić,
4. Zorana Lužanin,
5. Slađana Dimitrijević,
6. Andrijana Zekić.

Reviewers for hole volume were 2 female TeComp team members from UGR (María C. Cañadas Santiago) and UO (Irina Perfilieva).



TeComp
Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences
Co-funded by the Erasmus+ Programme of the European Union

Naziv materijala:

Ime recenzenta:

Ocena prema kriterijumima

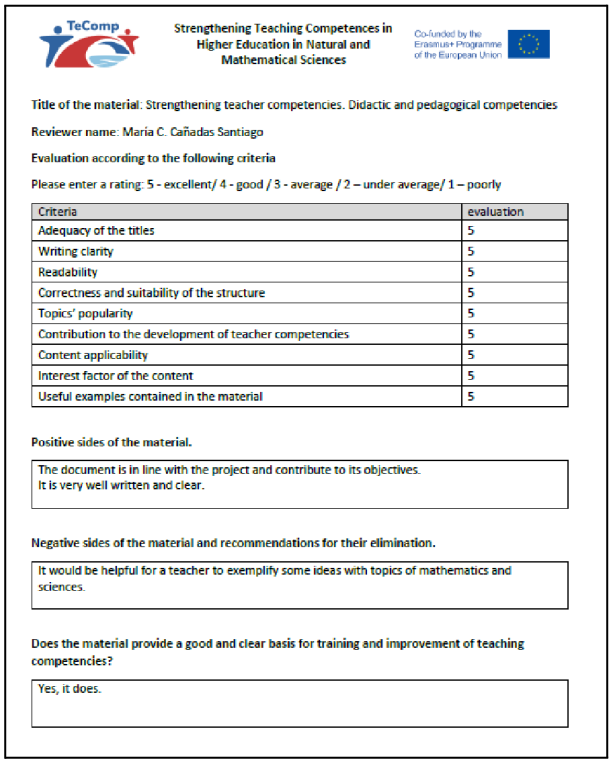
Molimo upišite ocenu: 5 - odlično / 4 - dobro / 3 - prosečno / 2 – ispod proseka / 1 – slabo

Kriterijum	ocena
Adekvatnost naslova	
Jasnoća pisanja	
Čitljivost	
Ispravnost i prikladnost strukture	
Popularnost teme	
Doprinost razvoju nastavničkih kompetencija	
Primenljivost sadržaja	
Zanimljivost sadržaja	
Materijal sadrži značajan broj korisnih primera.	

Pozitivne strane materijala.

Negativne strane materijala i preporuke za otklanjanje.

Da li materijal predstavlja dobru i jasnu osnovu za obuku i sticanje nastavničkih kompetencija?



TeComp
Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences
Co-funded by the Erasmus+ Programme of the European Union

Title of the material: Strengthening teacher competencies. Didactic and pedagogical competencies

Reviewer name: Maria C. Cañadas Santiago

Evaluation according to the following criteria

Please enter a rating: 5 - excellent/ 4 - good / 3 - average / 2 – under average/ 1 – poorly

Criteria	evaluation
Adequacy of the titles	5
Writing clarity	5
Readability	5
Correctness and suitability of the structure	5
Topics' popularity	5
Contribution to the development of teacher competencies	5
Content applicability	5
Interest factor of the content	5
Useful examples contained in the material	5

Positive sides of the material.

The document is in line with the project and contribute to its objectives.
It is very well written and clear.

Negative sides of the material and recommendations for their elimination.

It would be helpful for a teacher to exemplify some ideas with topics of mathematics and sciences.

Does the material provide a good and clear basis for training and improvement of teaching competencies?

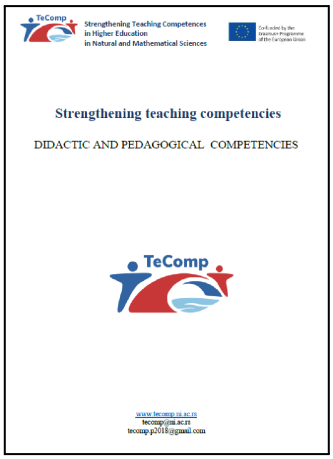
Yes, it does.

Figures 52-53. Review form and Review of Volume **STRENGTHENING TEACHER COMPETENCES** - DIDACTIC AND PEDAGOGICAL COMPETENCES

Final versions of materials were accepted by Editorial board on online meeting held on 25th August. Materials were organized in two booklets. One booklet is devoted to didactic and pedagogical competences and the other to digital competences. At the end of year 2021 the materials were published in Serbian and English. Volume **STRENGTHENING TEACHER COMPETENCES** - DIDACTIC AND PEDAGOGICAL COMPETENCES have 9 themes (193 pages), written by 9 authors (2 males and 7 females) from 3 universities (UNI, UNS, UB):

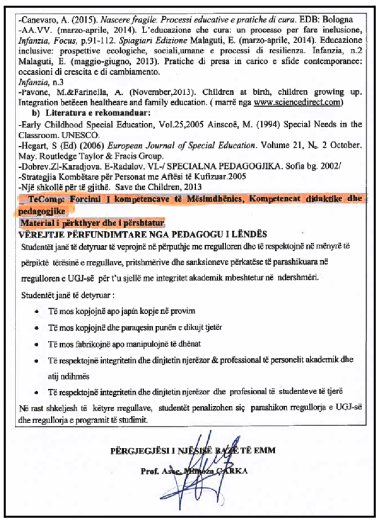
1. Miroslav Ćirić: **Modernisation of teaching and learning in the European Higher Education Area**,
2. Zorana Lužanin, Andreja Tepavčević: **Preparation of teaching materials - Example of a textbook**,
3. Andreja Tepavčević, Zorana Lužanin: **Assessment of student knowledge - How to evaluate math students**,
4. Predrag Vujović: **Ask, Don't Tell! Techniques to Promote Interactive Teaching and Learning with Understanding**,

5. Marija Jovanović: **Effective pedagogical communication in higher education - How to communicate in class?**
6. Jelena Petrović: **Constructivist approach to teaching and learning in higher education**,
7. Aleksandra Anđelković: **Effective teaching through the believes and reflexivity of teacher**,
8. Dragana Jovanović: **Teaching methods in university settings - How to teach students how to learn**,
9. Jelisaveta Todorović: **Difficulties and challenges of inclusion in higher education**.



Figures 54-55. Cover pages in Serbian and English version of Volume **STRENGTHENING TEACHER COMPETENCES -** DIDACTIC AND PEDAGOGICAL COMPETENCES

During the spring 2022 partners from Albania, translated it in Albanian. 7 staff members (Irma Gjolleshi, Dhori Terpo, Antuela Sinani, Loreta Mamani, Mimoza Çarka, Romeo Mano, Isidor Kokalari) from Eqrem Çabej University Gjirokastër were involved in translating the materials. Also, ECUG adopted this volume as a part of literature for several courses related to Methodology and Pedagogy.



Figures 56-57. Cover page in Albanian version of Volume **STRENGTHENING TEACHER COMPETENCES -** DIDACTIC AND PEDAGOGICAL COMPETENCES and the innovated literature for course Inclusion in Education

A lot of additional training materials in the form of PowerPoint presentations were created by the instructors during the related activities within WP3.

SUMMARY FOR TASK 2.2

Title	Universities equipped with technology-enhanced learning spaces	
Type	☒ Teaching material ☒ Learning material ☒ Training material	☐ Event ☐ Report ☐ Service/Product
Achieved goals	Printed and electronic materials for psychological, pedagogical and methodological (PPM) training courses were prepared (in Serbian, English and Albanian). They were used for the trainings organized within WP3.	
Conclusion	Aims are completely achieved.	
Sustainability	Prepared material stays available to the teaching staff and presents a good base for their further professional development.	

Task 2.3 activities – Creating material for providing language support for teaching staff

Aim of Task 2.3 activity was preparation of printed and electronic material for language support for teaching staff.

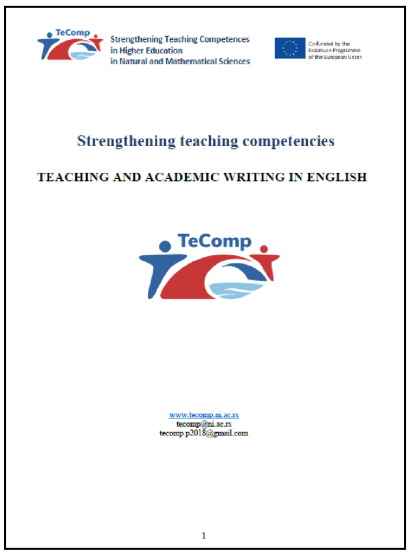
In order to increase capacities of teaching staff in natural and mathematical sciences for teaching and academic writing in English and thus provide better options for internationalization of the HEIs, both at the institutional and personal level, the team of three teachers from the University of Niš, Faculty of Philosophy, designed an intensive, specialist course (realised within WP3) entitled *Teaching and Academic Writing in English for Natural and Mathematical Sciences* (*TAWE*) and the appropriate teaching material for it.
TAWE course is based on the material carefully designed to cover crucial aspects in teaching academic courses in English and better academic writing in English in the fields of natural and mathematical sciences (the use of class language, instructions for effective lecturing, organizing interactive lectures, the use of teaching tools and visual aids, the forms of academic writing, differences between spoken and written academic genres, etc.).
The TAWE course has its predecessors in three series of EMI courses implemented at four largest state universities in Serbia (Belgrade, Novi Sad, Niš, Kragujevac). The first one was in 2016, within the Tempus project *Fostering University Support Services and Procedures for Full Participation in the European Higher Education Area (FUSE)*, coordinated by the University of Niš. The other two were within the National Erasmus+ initiative *Study in Serbia* (2019 and 2021). The participants and the EMI lecturers were university teachers from the same four participating Serbian universities as in TeComp project. A small portion of the open source material used for these courses was used for TAWE, but the majority of the TAWE material, primarily the handbook, was specially written, designed and adapted for this project.
The course (teaching/learning/training) material was prepared in the activity 2.3, and partly during the course implementation in the activity 3.4. The primary course material is TAWE course handbook, written by the three instructors (Mišić Ilić, Đorđević, Tatar 2021). It was printed and distributed to course participants, and also uploaded as a pdf in the Google classroom dedicated for the course implementation as Teaching and academic writing in English - TAWE.pdf, available for course participants at https://classroom.google.com/u/0/w/NDY2OTA0OTc3ODcx/tc/NDY2OTA0OTc4Nzk3. Volume **STRENGTHENING TEACHER COMPETENCES –** TEACHING AND ACADEMIC WRITWNING IN ENGLISH have 6 themes (57 pages):

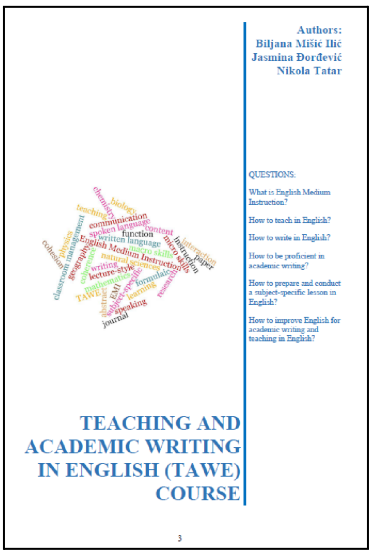
1. Introduction,
2. English medium instruction (EMI),
3. Focus on lecturing,
4. Academic writing,
5. Differences between spoken and written academic language,

6. Focus on language.

The course material was prepared in two phases. First, the three instructors designed the draft course syllabus, and wrote the first version of the TAWE handbook (July-September 2021). After the needs analysis of the potential participants in September 2021, the final version of the TAWE course handbook was completed in October 2021. It was printed later in 2021. In the next stage, prior to the course implementation, the three instructors designed PowerPoint presentations and adapted other material (illustrative videos from open-access reliable and high-quality sources, open-source additional books and articles, and a list of useful links) to be used in online classes during the course (March 2022). All the material was uploaded in the TAWE Google classroom in March 2022.

The TAWE course, and the material prepared for it, is based on the theoretical principles of English for Specialized Purposes, ESP and English (as a) Medium of Instruction EMI. ESP is an approach to English teaching that identifies and targets current and/or future academic or occupational needs of particular learner populations, focuses on the necessary language, genres and skills to address these needs, and designs courses whose content and aims are oriented to the specific needs of the learners, using general and/or discipline specific teaching materials and methods. The subfield of ESP known as English for academic purposes (EAP) focuses on ESP in academic settings.





Figures 58-59. Cover pages of Volume **STRENGTHENING TEACHER COMPETENCES –** TEACHING AND ACADEMIC WRITWNING IN ENGLISH

The term *English Medium Instruction* (EMI) is usually defined as "the use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English."

As TAWE is a specially tailored course for natural and mathematical science, the teaching material makes use and includes authentic and adapted examples from reliable scientific sources in these scientific fields.

TAWE teaching material and the course for university teachers of natural and mathematical sciences, as specified by the *TeComp* project requirements, cover two main areas, to build two different, but interrelated kinds of competences – university teaching in an English Medium Instruction (EMI) environment and discipline-specific academic writing in English. The components of *TAWE* include EMI topics, academic writing and focus on English, appropriate in genre, style and medium.

SUMMARY FOR TASK 2.3

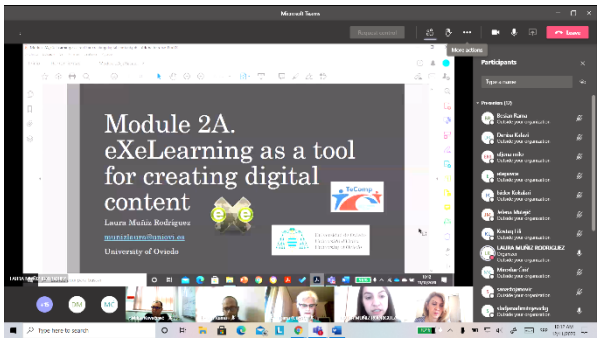
Title	**Universities equipped with technology-enhanced learning spaces**	
Type	☒ **Teaching material** ☒ **Learning material** ☒ **Training material**	☐ Event ☐ Report ☐ Service/Product
Achieved goals	Printed and electronic material for providing language support to professional development of teaching staff was prepared and used within the task 3.4. In this way it is increased the opportunity for Serbian and Albanian universities to be successfully involved in the mobility program for students and teachers.	
Conclusion	Aims are completely achieved.	
Sustainability	Prepared material stays available to the teaching staff and presents a good base for their further language professional development. Also, the course is officially accredited in the Centre for professional education at the Faculty of Science and Mathematics, University of Niš, the handbook may be published as a book by the University of Nis, and used for further courses.	

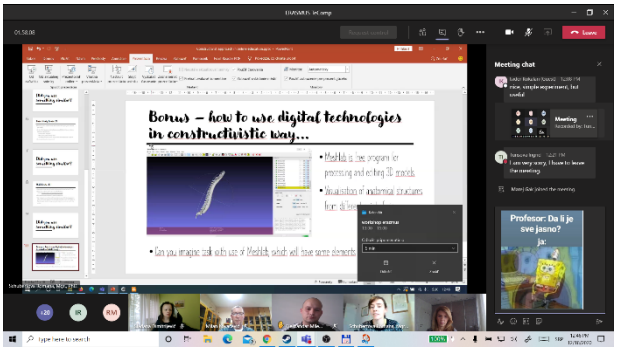
Task 2.4 activities – Preparing guidelines for the technological enhancement of teaching and learning

Aim of Task 2.4 activity was preparation of guidelines and instructions for wider integration of ICT in teaching and learning.

Work on task 2.4 was organized simultaneously with work on task 2.2, because of many similarities and it is natural that those tasks complement each other. Task brainstorming and collecting ideas started during visits of partners in EU in year 2019 and then continued during webinars organized by partners from UNIOVI and UMB in December 2020.

Figures 60-61. Photos of the visit to University of Oviedo, Spain





Figures 62-63. Photos of the webinars prepared by University of Oviedo, Spain, and Matej Bel University in Banská Bystrica, Slovakia

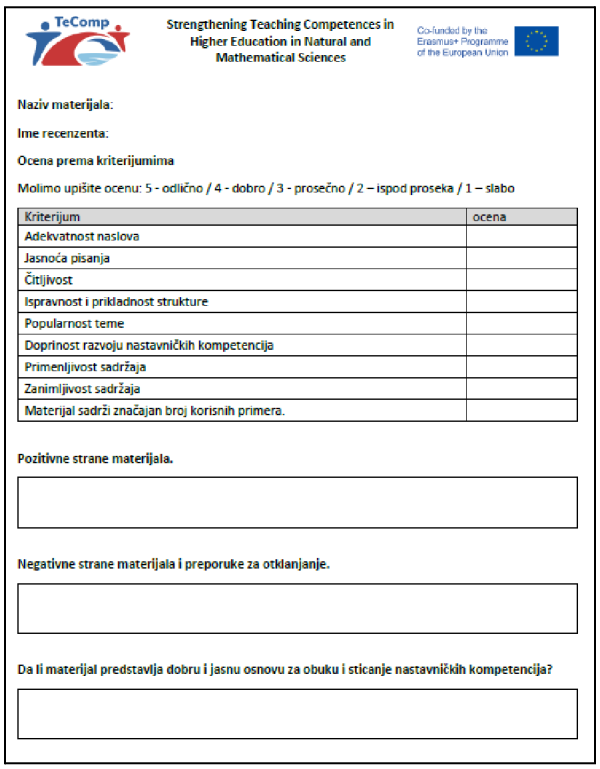
After those trainings partners from Serbia begun to work intensively on preparation of the guidelines for the technological enhancement of teaching and learning.

The same Editorial board, as for task 2.4, was entrusted with the management of the process of collecting and reviewing teaching materials, as well as the selection of materials for printing and the design of volumes.

Draft versions of teaching and learning materials, each of them in Serbian and in English, were collected till LCM in Kragujevac in June 2021. At that meeting Editorial board defined review process and schedule of activites. During the summer 2021 review process was ended. Reviewers for individual themes were TeComp team members from UB, UNS, UNI, UNIKG. There were involved 1 male and 5 females:

1. Goran Radojev,
2. Jelena Ignjatović,
3. Andreja Tepavčević,
4. Slađana Dimitrijević,
5. Ivana Radojević,
6. Andrijana Zekić.

Reviewers for hole volume were 1 male and 1 female TeComp team member from UNIOVI (Luis J. Rodríguez Muñiz) and UO (Petra Murinova).



TeComp — Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences — Co-funded by the Erasmus+ Programme of the European Union

Naziv materijala:

Ime recenzenta:

Ocena prema kriterijumima

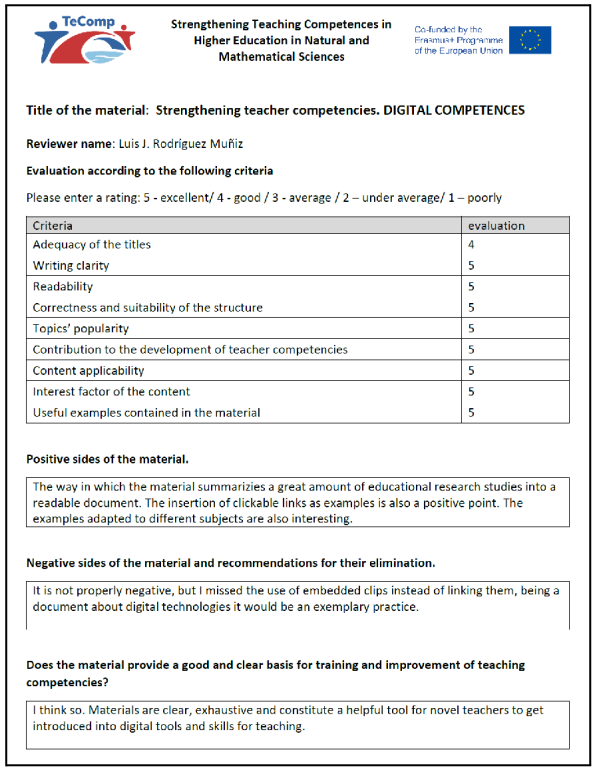
Molimo upišite ocenu: 5 - odlično / 4 - dobro / 3 - prosečno / 2 – ispod proseka / 1 – slabo

Kriterijum	ocena
Adekvatnost naslova	
Jasnoća pisanja	
Čitljivost	
Ispravnost i prikladnost strukture	
Popularnost teme	
Doprinost razvoju nastavničkih kompetencija	
Primenljivost sadržaja	
Zanimljivost sadržaja	
Materijal sadrži značajan broj korisnih primera.	

Pozitivne strane materijala.

Negativne strane materijala i preporuke za otklanjanje.

Da li materijal predstavlja dobru i jasnu osnovu za obuku i sticanje nastavničkih kompetencija?



TeComp — Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences — Co-funded by the Erasmus+ Programme of the European Union

Title of the material: Strengthening teacher competencies. DIGITAL COMPETENCES

Reviewer name: Luis J. Rodríguez Muñiz

Evaluation according to the following criteria

Please enter a rating: 5 - excellent/ 4 - good / 3 - average / 2 – under average/ 1 – poorly

Criteria	evaluation
Adequacy of the titles	4
Writing clarity	5
Readability	5
Correctness and suitability of the structure	5
Topics' popularity	5
Contribution to the development of teacher competencies	5
Content applicability	5
Interest factor of the content	5
Useful examples contained in the material	5

Positive sides of the material.

The way in which the material summarizies a great amount of educational research studies into a readable document. The insertion of clickable links as examples is also a positive point. The examples adapted to different subjects are also interesting.

Negative sides of the material and recommendations for their elimination.

It is not properly negative, but I missed the use of embedded clips instead of linking them, being a document about digital technologies it would be an exemplary practice.

Does the material provide a good and clear basis for training and improvement of teaching competencies?

I think so. Materials are clear, exhaustive and constitute a helpful tool for novel teachers to get introduced into digital tools and skills for teaching.

Figures 64-65. Review form and Review of Volume **STRENGTHENING TEACHER COMPETENCES** - DIGITAL COMPETENCES

Publishing process was the same as for task 2.2 and, at the end of year 2021, it resulted with the volume **STRENGTHENING TEACHER COMPETENCES** - DIGITAL COMPETENCES (in Serbian and in English). There are 7 themes (146 pages), written by 10 authors (3 males and 7 females) from 4 universities (UNI, UNS, UB, UNIKG):

1. Jelena Ignjatović: **Creating interactive teaching materials**,
2. Slađana Dimitrijević, Ana Kaplarević Mališić: **Blended learning with special reference to the Flipped classroom**,
3. Nebojša Jasnić, Siniša Đurašević: **Modernization of teaching and learning biology**,
4. Tatjana Anđelković, Ivana Kostić: **Remote access to analytical instruments in chemistry higher education – From idea to realization**,
5. Goran Radojev: **Visualization problems using GeoGebra and Wolfram Mathematica**,
6. Đurđica Takači: **Mathematics contents in dynamic geometry environment**
7. Sana Stojanović Đurđević: **Theorem prover Isabelle in the teaching of natural and mathematical sciences**.

Figures 66-67. Cover pages in Serbian and English version of Volume **STRENGTHENING TEACHER COMPETENCES -** DIGITAL COMPETENCES

During the spring 2022 partners from Albania, translated it in Albanian. 4 staff members (Lorenc Ekonomi, Denisa Kafazi, Msc. Silvja Çobani, Ardian Çërava) from Fan S. Noli University Korce were involved in translating the materials.

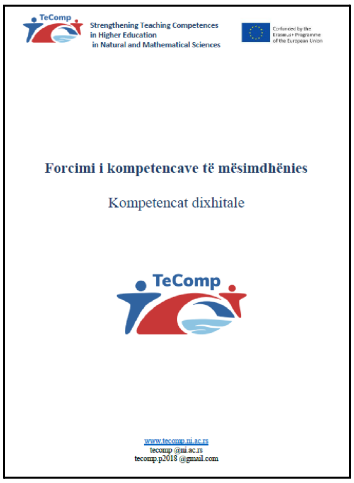


Figure 68. Cover page in Albanian version of Volume **STRENGTHENING TEACHER COMPETENCES** - DIGITAL COMPETENCES

A lot of additional training materials in the form of PowerPoint presentations were created by the instructors during the related activities within WP3.

SUMMARY FOR TASK 2.4

Title	**Universities equipped with technology-enhanced learning spaces**	
Type	☒ **Teaching material** ☒ **Learning material** ☒ **Training material**	☐ Event ☐ Report ☐ Service/Product
Achieved goals	Guidelines and instructions for wider integration of ICT in teaching and learning were given in the booklet for digital teacher competences. They were used for the trainings organized within WP3.	
Conclusion	Aims are completely achieved.	
Sustainability	Prepared material stays available to the teaching staff and presents a good base for their further professional development.	

WORK PACKAGE 2 – CONCLUSION REMARKS

All the TeComp team partners worked together to achieve expected deliverable/results/ outcomes. Cooperation was constructive and intensive. Having in made analyses from WP1 and plans for WP3, all four activities (2.1, 2.2, 2.3, and 2.4) are planned, organized, and successfully completed. It can be concluded that the educational infrastructure at the PC HEIs was upgraded according to the plans and further development is enabled.