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# Quality Assurance report Period from November 30<sup>th</sup>, 2020-May 14<sup>th</sup>, 2021 June 2021





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+	
<b>Coordinator Institution:</b>	University of Nis	
Coordinator:	Prof. dr Jelena Ignjatović	
Project duration:	15.11.2018 14.11.2022	
Work package:	WP5 – Quality assurance and monitoring	
Lead organization of	University of Korce	
WP5:	Activity 5.3 Preparing and analysing quality reports	
Version of the document:	second	
Status:	Final	
Dissemination level:	Institutional, Internal	



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# **REPORT-UNI**

The meeting between the EACEA agent of the TeComp project Inmaculada Rodriguez and the project coordinator Jelena Ignjatović was held on November 13<sup>th</sup> 2020 via WhatsApp. It was the only acceptable option, because of the problem with the officer computer. Thanks to the agency and officer's good will to help TeComp progress, the project contact person (and by extension, the whole consortium) got the guidelines on the management of the following activities.

"As a follow up of our that online meeting, the main conclusions are summarized. The consortium will send a request to extend the eligibility period of the project so that the project objectives can be achieved. The consortium will present an updated work plan adapted to the Covid situation. The workplan will be accompanied with a explanatory note explaining the changes with respect to the previous workplan. With the amendment request for the extension, a modified budget breakdown can be presented. The modified budget has to be discussed with the Agency to see what will be possible to modify in line with the CBHE rules. All modifications have to be well justified."

# The request for extension of the project eligibility period

The documents prepared for the Brussels, to justify the request for project extension are added to this report as the Annex I and Annex II and the extension of the project eligibility period is approved by EACEA.



EUROPEAN EDUCATION AND CULTURE

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EXECUTIVE AGENCY (EACEA)	
EACEA A - Erzumur <sup>2</sup> , EU Solidarity Corps EACEA.A.4 - International Capacity Building	
AMENDMENT	
N° 2018 - 2467 / 001 - 002	ARTICLE I
TO	
GRANT AGREEMENT	ARTICLE 12 – ENTRY INTO FORCE OF THE AGREEMENT AND DURATION OF THE ACTION of the Agreement shall read as follows:
2018 - 2467 / 001 - 001	1.2.1 The agreement shall enter into force on the date on which the last party signs.
598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP	1.2.2 The action shall run for 48 months as of 15-11-2018 ("the starting date of the action") and shall end on 14-11-2022.
Concluded between the Education, Audiovisual and Culture Executive Agency hereinafter referred to as "the Agency") acting under powers delegated by the European	
commission, represented for the purposes of signature of this amendment by RAHDERS	ARTICLE II
talf, Authorising Officer by Sub-delegation of the Agency,	All the other provisions and annexes of the Agreement and any previous amendments, which are not changed by this amendment shall remain unchanged and shall continue to apply.
nd	ADTICLE III
INIVERZITET U NISU	AKIRLEIII
JNIVERZITETSKI TRG 2,	The present amendment shall form an integral part of the Agreement. It shall take effect on the date of its signature.
IS - 18000 NIS	
AT NUMBER: RS100335096	
ereinafter referred to as "the coordinator",	SIGNATURE
nd the other beneficiaries, listed in the above mentioned Grant Agreement (hereinafter	
eferred to as "the Agreement"),	RAHDERS Ralf
ereinafter referred to collectively as "the beneficiaries",	Signed in Brussels, on 16/4/2021
laving regard to the mandate(s) attached to the Agreement, which allow(s) the coordinator to equest the amendment of the latter,	
Whereas by letter and email received on $1/4/2021$ the coordinator has requested an amendment f the Agreement,	
Vhereas the Agency agrees to amend the Agreement,	
as a consequence, the Agreement is modified as follows:	

# **Curriculum development**

Analysis of the situation in higher education in Serbia and Albania, as well as the comparative analysis with the partner EU country universities showed a huge necessity for innovation in terms of both IT technologies used and application of new psychology and methodology principles in teaching and learning in the field of natural sciences and mathematics. While we were still in a very early phase of subject innovation, CoVid-19 pandemic started and pushed us to not only work a lot faster, but also adapt even more to the new methods of organization of online teaching and learning. Nonetheless, it was crucial to raise the awareness of teachers on the importance of enhancing their proficiency with modern methods of education. When the stakes were at the all-time high, we requested help from our EU partners.

On some universities in Serbia, the accreditation period came at a clutch, so we managed to get many new subjects accredited. All of those subjects were made in close collaboration with our EU partners, who have given us a lot of useful advice.

# **Prepation of the teaching/training material**



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For the purpose of preparing teaching/training materials, 4 workshops given by EU partners were organised from December 2020 to February 2021. For EU experience collection, the first visit to specialized departments at UGENT was planned (all expenses paid) and stopped by COVID, so we organized a series of webinars held by UNIOVI, UMB, UG, UGR with 245 participants (way more than planned) from WB HEIs interested.

All these events and activities are presented below accompanied by a brief description.

# **UGR WEBINAR**

Granada's Webinar was a workshop organized by the professors of the University of Granada, from December 2nd to December 4th, 2020. Teaching staff form all partner universities (60 in total) participated in this online workshop. The aim of the workshop was the preparations of PPM training materials. The presentations and the discussions followed the agenda above.





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# Analysis

Following the workshop, an evaluation questionnaire was sent to the partners via Google Forms. There were 31 responders. The results are presented in the figures and tables below







### Figure 1. Name of the institution

Figure 2. To what extent did the webinar meet your expectations?





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#### Figure 3. Which presentation did you find the most useful?









Figure 5. What is your opinion of the following assertions?

### Table 1. Webinar's strength according to participants

#### Strengths of the event and contributions or activities enjoyed by participants

Contemporary topics are covered.

Have been chosen the adequate topics

the possibility to interact with different university structures and different methodologies

Problems addressed during teaching, quality of presentation, laying out problematic situations in the teaching process, treatment of teaching methods, evaluation with well-organized alternatives.

Positivity, humor and willingness to answer every question was at the highest level.

Very good and cooperative atmosphere. Great networking. Presenters were competent and experienced in the subjects of their presentation. I think that this workshop is a good base for long-term collaboration towards improvements of teacher's competence and developing educational practice at our Faculty.

Each session was interesting and useful.

Very useful information. Good quality of presentations

All presentations are very helpful for me, I learn more, thank you!





#### Table 2. Suggestions from the participants

Suggestions for improvement

Be more practical and more interactive

The teaching material based on the textbook or prepared lectures should contain: 1. Describing the problem situation where the contradiction between the known knowledge and the new knowledge is resolved. 2. Organization of independent and directed work. 3. Formulation of findings concluded 4. Generalization and areas of application

More practical examples

It would be better to held face to face, but of course it was impossible in this situation.

#### Table 3 Comments from participants

# **UNIOVI WEBINAR**

The professors of Oviedo University organized an online workshop from university of Oviedo from December 9<sup>th</sup> to December 11<sup>th</sup>, 2020. Teaching staff from all the partner universities participated (58 partner universities and 3 from the University of Oviedo). The workshop was about the preparations of PPM training materials held online by teachers. The course has been designed, based on University of Oviedo trainers' expertise, to include recording, editing and blending educational videos, blended and flipped learning, eXeLearning as a tool for creating digital content, R as a tool for creating randomize test models exportable to Moodle.



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# Analysis

Following the workshop, an evaluation questionnaire was sent to the partners via Google Forms. There were 33 responders. The results are presented in the figures and tables below







#### Figure 6. Name of the institution











### Figure 8. Which presentation did you find the most useful?



Figure 9. How do you asses the following aspects?







# Figure 10. What is your opinion of the following assertions?

### Table 4. Webinar's strength according to participants

### Strengths of the event and contributions or activities enjoyed by participants

All presentations in this webinar was very interesting and helpful for me.

Development of our tools to create more advanced ways to organize our lectures.

Very informing

The exchange of teaching experiences in natural sciences, the methods of knowledge transfer, accurate and organized, the way of control and evaluation, are the basis for the differentiated evaluation of students and improvement in today's conditions.

The material was concrete, very nice presented. Helpful

All topics are very current. Seminar helped me a lot with some problems that I personally had with editing video materials.

The knowledge that we have got through presentations is very applicable and useful. I will improve my teaching with acquired knowledge and techniques.





## Table 5. Suggestions from the participants

#### Suggestions for improvement

The content of the presentations should be a bit shorter, so some parts of them would be more clarified to participants.

As a lecturer of physics for 35 years, he supports the treatment of knowledge in the Table, where knowledge is treated live based on the presentation of a problem situation with a clear objective and its solution depending on: knowledge, understanding, application, analysis and synthesis.

Maybe add some more information on slides, or in the form of a short tutorial, or notes after the lecture

#### Table 6 Comments from participants

Very good webinar.
A maximum gratitude and appreciation of the Webinar organizers and Referees with very professional
works. Thanks also to the Honored Professors from the Universities of Serbia.
Congratulations. Thank You
Power point presentations could be provided at the beginning of the presentation
I am thankful to the teachers to clear and detailed presentations.

# **UMB WEBINAR**

Professors from B. Bystrica organized an online workshop from December 16<sup>th</sup> to December 18<sup>th</sup>, 2020. Teaching staff from all the partner universities participated, with a total of 57 people. The workshop was regarding the preparations of PPM training materials for this University's training course and followed the agenda.

The presentations of the workshop covered topics such as graphic tools in mathematics and life sciences, causality from non-experimental data, mobile applications for the collection of biological data in citizen science, mobile applications for plant species identification, and constructivist approaches and the development of students' skills.



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# Analysis

Following the workshop, an evaluation questionnaire was sent to the partners via Google Forms.

			Training	design form		
Training	3		Online web	rning processes		
Educatio	onal pro	gram / project	ERASMUS+	/ TeComp		
Trainers Vladimir Jan Turisova		nis, Lukas Laffers, Romana Schubertova, Ingrid				
Participants (profile, number) see the scre		eenshots				
Learning outcomes recorded fi		les of the webinar				
Place, da	ates		UMB, Bans	ka Bystrica, December 16-18, 2	a, December 16-18, 2020	
		Sessio	on:	Methods	Materials	
Day 1	AM	Graphic tools in r and life sciences Janis)	nathematics (Vladimir	presentation, practical demonstration, discussion	online presentation	
	PM	Causality from non- experimental data (Lukas Laffers)		presentation, practical demonstration, discussion	online presentation	
Day 2	AM	Mobile applications for the collection of biological data in citizen science projects (Romana Schubertova) Mobile applications for plant species identification (Ingrid Turisova)		presentation, practical demonstration, discussion	online presentation	
	РМ			presentation, practical demonstration, discussion	online presentation	
Day 3	AM	Dangers of multit (Vladimir Janis)	tasking	presentation, practical demonstration, discussion	online presentation	
	PM	The use of online tools to support constructivist approaches and the development of students' skills - case analysis (Romana Schubertova)		presentation, practical demonstration, discussion	online presentation	

There were 19 responders. The results are presented in the figures and tables below.

Support and materials needed from the organizers:







Figure 11. Name of the institution



Figure 12. To what extent did the webinar meet your expectations?







## Figure 13. Which presentation did you find the most useful?













Table 7. Webinar's strength according to participants

## Strengths of the event and contributions or activities enjoyed by participants

The examples and applications presented are very useful and definitely a strong point of the event. The presentations was very interesting and helpful for me. Thank you!

Everything was beautiful, full of value, and very serious in presentation! Deserve a big up organizers and participants! Jelena remained the promoter of maximum energy and intensity throughout the sessions!

Table 8. Suggestions from the participants

# Suggestions for improvement

Exchange of practical experiences during the teaching process, procedures to be applied during the differentiated and fair control and evaluation of knowledge by students, today is the biggest challenge of natural sciences.





#### Table 9 Comments from participants

Thank you. Helpful info. Good experience.
Thank you for everything beautiful you presented to us!
Very useful presentations

# **UGENT WEBINAR**

Professors from University of Ghent organized an online workshop from February 8<sup>th</sup> to Februar 10<sup>h</sup>, 2021. Teaching staff from all the partner universities participated, with a total of 77 people. The workshop was regarding the preparations of PPM training materials for this University's training course and followed the agenda.



Building on our experiences and the research of Ghent university teachers in the field of professional development, their team has developed a model to map the effects of professional development initiatives. This model integrates all processes and variables in specific stakeholders that are related to the outcomes of professional development. In other words, what we know from the research literature about "what works" has been incorporated in a set of interrelated clusters that cover steps in the design and implementation and evaluation of a Professional Development (PD) initiative (see Merchie, Tuytens, Devos & Vanderlinde, 2018).





# The online CMT meeting

Online CMT meeting was held on March 22th, 2021, beginning at 4PM (16h). The main objective of the meeting was making plans for the following trainings that will be organized by EU partners in accordance to planned activities.

The consortium members agreed to try to comply with the following schedule:

• The first training will be given by the Ghent University lasting 90 hours spread over 12 weeks with 12 tasks to be finished. Teachers who finish all the tasks successfully will get their university certificates and additional 3ESPB. Due to circumstances, this training will be held online, with 5-10 hours per week of engagement of teachers to improve their competences.

- Oviedo and Granada plan to organize their trainings in October and November.
- Banska Bystrica and Ostrava in December or, maybe January 2022.

All the training are planned to be organized online, but if circumstances change, they will be organised in person, but in any case for teachers from Serbia and Albania together.

In accordance to acquired knowledge and experiences from EU partners, teachers from Serbia and Albania will prepare teaching materials for usage of modern pedagogical, methodological, and psychological principles, as well as modern technologies in teaching and learning in three languages Serbian, English and Albanian. After finishing materials, the second part of the trainings given by teachers from Serbia and Albania will be held - Andreja Tepavčević will manage and organise the activities. Plan is to start this part of the trainings from the September and to finish them before March or April 2022 - manager Jelena Ignjatović. The dissemination activities must begin as soon as possible- popularization lectures, some research papers, interviews etc.

Andreja suggested to partners to spend their money, planned for printing materials, to pay fees for some scientific journals where they can submit a paper, with project results or some other didactical principles, for printing.

After finishing all the agreements with EU partners, coordinators form Serbia and Albania stayed online little longer to make some conventions on staring to prepare teaching material. They picked the editorial board comprising 5 members:

- dr Miroslav Ćirić, University of Niš
- dr Zorana Lužanin, University of Novi Sad
- dr Andrijana Zekić, University of Belgrade





- dr Siniša Đurašević, University of Belgrade
- dr Slađana Dimitrijević, University of Kragujevac

All members of the QAMB from each University gave their assessment of the achieved deliverables in this period of time.

# LearningKey platform

The LearningKey platform has started to be developed and adopted in this period of time. The idea for its structure and realisation was created in close and longlisting collaboration between the Department of Computer Science, Faculty of sciences and mathematics, University of Niš and project coordinator PhD Jelena Ignjatovic, and a renowned software company Badin Soft from Nis, sometime before the project. Due to the high complexity of the platform, not all its features could be realised during the period of the project activities, so it is good we started developing it earlier. The LearningKey platform is intended as a cloud software solution that offers services for the application of educational technologies. In the LearningKey environment, teachers (educators) are enabled to, to the extent they wish, digitize the teaching and learning process and offer students/participants a comprehensive interactive experience during the learning process. The platform offers tools for creating and managing online courses, testing and evaluation, virtual classrooms with scheduling systems, homework functions, providing the conditions for full digitalization of the learning process.

# **Online training- UGENT**







Prof. Dr. Martin Valcke

Dr. Britt Adams

Dr. Laura Thomas





Following the previous online meeting, Albanian and Serbian Universities were part of a 12week online training course (from 15<sup>th</sup> of February 2021 to 17<sup>th</sup> of May 2021). It implied a time investment of 45 hours (1, 5 ECTS credits). There was a total of 77 participants in this course (17 UNI, 21 UB, 12 UNS, 18UNIKG, 1 ECUG, 8 UNIKO).

The course was conducted online using the UFORA platform and it covered the following topics: (1) Knowledge Clips, (2) Interactive video, (3) Posters, (4) Discussion and collaboration, (5) Animations and (6) Asking questions.



The course focused on the design and development of course-related solutions and on developing interactive feedback in a peer assessment revision cycle.

Teachers learned to use a lot of contemporary online tool as a teaching method, like Animaker, edPuzzle, OpenShot etc.

TeComp Co-funded by the	Animaker
GENT Enasmust Programme of the European Union	🤣 edpuzzle
This is a 12-week course, implying a time investment of 45 hours (15 ECT credits). The following topics were lackide by the 124T member during this online task-based course: (1) Knowledge Clips, (2) Interactive video, (3) Posters, (4) Obsission and collaboration, (5) Alanination and (6) Alaking questions. The course focused on the design and development of course-related solutions and on developing interactive feedback in a peer assessment revision cycle. Ghent (Belgium), June 15 2021 Prof. Dr. Martin Valce Ghent University Belgium Leional Inplatovic Coordinator TECOMP+ project	Tutorial Videos

At the end of the course the participants received certificates.





#### Analysis

Following the 12- week training, an evaluation questionnaire was sent to the partners via Google Forms. There were 60 responses. The results are presented in the figures and tables below.





Figure 2. How do you rate the training? (Score 1-5)











Figure 4. Which theme do you find the most useful for your future work?











Figure 6. To what extent do you agree with the following statements?







# UNI

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.1, 4.1, 7.2

Author(s) responsible for the deliverable:

QAMB reviewer(s): Zorana Jančić

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations
1.Complience with the objective of TeComp	Does the deliverable comply with the overall objectives of the project?	xyes □ no □ partially	1	1
2. Compliance with the specific objectives of the workpackage	Does the deliverables comply with the WP Objectives as specified in the WP description?	Xyes □ no □ partially	1	1
3. Correspondence with the description of work of the relevant activity	Does the deliverable correspond with the activity description as specified in the Application Form?	⊠yes □ no □ partially	1	1
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	X yes □ no	1	1
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	Xiyes □ no	1	1
6. Adequacy of written language	Level of written English	□excellent X adequate □ poor	1	1
Overall assessment and suggestions for improvement			/	
Date of Quality Assurance performed by QAMB reviewers: June 17th, 2021				
Deadline for submission of amended version of the deliverables: May 31 <sup>st</sup> , 2021				





# UNI

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.1, 4.1, 7.2

Author(s) responsible for the deliverable:

QAMB reviewer(s): Aleksandar Nastić

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations
1.Complience with the objective of TeComp	Does the deliverable comply with the overall objectives of the project?	xyes □ no □ partially	1	1
2. Compliance with the specific objectives of the workpackage	Does the deliverables comply with the WP Objectives as specified in the WP description?	Xyes □ no □ partially	/	/
3. Correspondence with the description of work of the relevant activity	Does the deliverable correspond with the activity description as specified in the Application Form?	⊠yes □ no □ partially	/	/
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	X yes □ no	1	1
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	Xiyes □ no	/	/
6. Adequacy of written language	Level of written English	□excellent X adequate □ poor	/	/
Overall assessment and suggestions for improvement				
Date of Quality Assurance performed by QAMB reviewers: June 17th, 2021				
Deadline for submission of amended version of the deliverables: May 31st, 2021				

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# UB

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.1, 4.1, 7.2

Author(s) responsible for the deliverable:

QAMB reviewer(s): Nebojša Jasnić

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations
1.Complience with the objective of TeComp	Does the deliverable comply with the overall objectives of the project?	xyes □ no □ partially	1	/
2. Compliance with the specific objectives of the workpackage	Does the deliverables comply with the WP Objectives as specified in the WP description?	X yes □ no □ partially	1	/
3. Correspondence with the description of work of the relevant activity	Does the deliverable correspond with the activity description as specified in the Application Form?	⊠yes □ no □ partially	1	/
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	X yes □ no	1	1
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	⊠yes □ no	1	/
6. Adequacy of written language	Level of written English	□excellent X adequate □ poor	1	/
Overall assessment and suggestions for improvement	ance performed by OAMR r	eviewers: June 1	7 <sup>th</sup> 2021	
Deadline for submission of amended version of the deliverables: May 31 <sup>st</sup> , 2021				

Jacunt Hesginsa





# UNS

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.1, 4.1, 7.2

Author(s) responsible for the deliverable:

QAMB reviewer(s): Zorana Lužanin

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations
1.Complience with the objective of TeComp	Does the deliverable comply with the overall objectives of the project?	xyes □ no □ partially	1	1
2. Compliance with the specific objectives of the workpackage	Does the deliverables comply with the WP Objectives as specified in the WP description?	Xyes □ no □ partially	1	/
3. Correspondence with the description of work of the relevant activity	Does the deliverable correspond with the activity description as specified in the Application Form?	⊠yes □ no □ partially	/	/
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	X yes □ no	/	1
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	Xlyes □ no	/	1
6. Adequacy of written language	Level of written English	□excellent □ adequate X poor	/	/
Overall assessment and suggestions for improvement Date of Quality Assur	ance performed by OAMB r	eviewers: June 1	7 <sup>th</sup> , 2021	
Deadline for submission of amended version of the deliverables: May 31 <sup>st</sup> , 2021				

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# **UNIKG**

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.2, 4.1, 7.2

Author(s) responsible for the deliverable:

QAMB reviewer(s): Slađana Dimitrijević

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations	
1.Complience with the objective of TeComp	Does the deliverable comply with the overall objectives of the project?	xyes □ no □ partially	1	1	
2. Compliance with the specific objectives of the workpackage	Does the deliverables comply with the WP Objectives as specified in the WP description?	Xyes □ no □ partially	1	1	
3. Correspondence with the description of work of the relevant activity	Does the deliverable correspond with the activity description as specified in the Application Form?	⊠yes □ no □ partially	1	/	
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	X yes □ no	1	1	
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	Xiyes □ no	1	1	
6. Adequacy of written language	Level of written English	<ul> <li>excellent</li> <li>adequate</li> <li>poor</li> </ul>	/	/	
Overall assessment and suggestions for improvement			1		
Date of Quality Assurance performed by QAMB reviewers: June 17th, 2021					

Deadline for submission of amended version of the deliverables: May 31st, 2

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# **ECUG**

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.2, 4.1, 7.2

Author(s) responsible for the deliverable:

QAMB reviewer(s): Romeo Mano

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations
1.Complience with the objective of TeComp	Does the deliverable comply with the overall objectives of the project?	xyes □ no □ partially	/	/
2. Compliance with the specific objectives of the workpackage	Does the deliverables comply with the WP Objectives as specified in the WP description?	yes □ no □ partially	1	1
3. Correspondence with the description of work of the relevant activity	Does the deliverable correspond with the activity description as specified in the Application Form?	⊠yes □ no □ partially	1	1
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	¥ yes □ no	/	1
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	¥iyes □ no	/	/
6. Adequacy of written language	Level of written English	□excellent ■ adequate □ poor	/	/
Overall assessment and suggestions for improvement			/	1
Date of Quality Assur	ance performed by QAMB re	eviewers: June 1	7 <sup>th</sup> , 2021	

Deadline for submission of amended version of the deliverables: May 31<sup>st</sup>, 2021

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# **UNIKO**

Quality Assurance Check List for Review of Deliverable: Activities 2.2, 2.4, 3.2, 4.1, 7.2

Author(s) responsible for the deliverable:

**QAMB** reviewer(s): Ardian Cerava

Assurance point	Issues to be addressed	Assessment	Comments	Recommendations
1.Complience with the objective of	Does the deliverable comply with the overall	x yes	/	1
TeComp	objectives of the project?	□ partially	7	,
2. Compliance with the specific	Does the deliverables comply with the WP	Xyes	,	
objectives of the workpackage	Objectives as specified in the WP description?	□ no □ partially	/	
3. Correspondence with the description of work of the	Does the deliverable correspond with the activity description as	⊠yes □ no	1	1
relevant activity	specified in the Application Form?	□ partially		
4. Compliance with the deliverables format	Is the deliverable presented using the Project's deliverable format	X yes □ no	/	/
5. Adequacy of complementary information	Examples of complementary info: External sources used Bibliography List of contacts Methodology used (i.e. for surveys)	XJyes □ no	/	/
6. Adequacy of written language	Level of written English	<ul> <li>excellent</li> <li>adequate</li> <li>poor</li> </ul>	1	1
Overall assessment and suggestions for improvement				
Date of Quality Assur	ance performed by QAMB r	eviewers: June 1	7 <sup>th</sup> ,2021	

Deadline for submission of amended version of the deliverables: May 31<sup>st,</sup> 2021

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# SUMMARY OF THE DELIVERABLES OF THE ACTIVITY 2.2

Title	Material for PPM training courses									
	□ Teaching material	⊠ Event								
Туре	□ Learning material □ Report									
	☑ Training material □Service/Product									
	These tasks are related to the preparati	on of printed and electronic material for								
Achieved	psychological, pedagogical and methodo	logical training courses. For this purpose,								
goals	two workshops are organised by UGR an	d UGENT. Collected experiences will help								
	to prepare training/teaching materials for	students and teachers in WB countries								
Conclusion	Aims are partially achieved.									
Sustainability	The training/teaching material will be pre	pared and delivered.								

# SUMMARY OF THE DELIVERABLES OF THE ACTIVITY 2.4

Title	Guidelines for the technological enhance	ement of teaching and learning					
	☑ Teaching material	⊠ Event					
Туре	□ Learning material	□ Report					
	☑ Training material	□Service/Product					
Achieved	This task is aimed in preparing guidelines f	For wider integration of ICT in teaching and					
goals	learning. For that purpose, the educators fr	om corresponding specialized departments					
guais	at UNIOVI and UMB organised two onlin	e workshops.					
Conclusion	Aims are partially achieved.						
Sustainability	The training/teaching material will be prep	pared and delivered.					

# SUMMARY OF THE TASK 3.2

Title	Teaching stafftrained in new PPM princi	iples							
	⊠ Teaching material	⊠ Event							
Туре	□ Learning material	□ Report							
	⊠ Training material	□Service/Product							
Achieved	The first series of training courses within th	is task started with the three-months long							
goals	training organized by UGENT with 77 part	icipants.							
Conclusion	Aims are partially achieved.								
Sustainability	The participants will get the certificate and training will be disseminated and								
Sustainability	accredited as a short-cycled CPD.								





# **SUMMARY OF THE TASK 4.1**

Title	The integration of online technologies	s into traditional courses											
	□ Teaching material	□ Event											
Туре	□ Learning material	□ Report											
	□ Training material Within this activity many pilot courses were delivered owing to necessity f												
Achieved	improving teaching and leering in the	EU HEIs. The role of the implemented pilot											
goals	subjects is to demonstrate the benefits	of using modern technologies in T&L in the											
	field of natural sciences and mathematic	28.											
Conclusion	Aims are completely achieved.												
Sustainability	LearningKey platform for teachers	and students, enhancement of teaching											
Sustainability	competences.												

# **SUMMARY OF THE TASK 7.2**

Title	Meetings of the CMT organised	
	□ Teaching material	□ Event
Туре	□ Learning material	⊠Report
	□ Training material	Service/Product
Achieved goals	Online CMT meeting was successfully realization of the first project activities an	organised, and all important tasks for the re discussed and adopted.
Conclusion	Aims are completely achieved.	
Sustainability	CMT meetings are planned to be held a	t regular intervals of 8 months. All results
Sustainability	must be adopted by the consensus of all i	ts members.



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# ANNEX I to the quality report NEW WORK PLAN







# P1 - University of Niš (Faculty of Sciences and Mathematics) for the periodfrom December 2020 until November 2022 Timetable of Activities

	Activities	Total												
Ref.nr/ Sub-ref	Title	duration (number of weeks)	duration December (number of 2020 weeks)	January 2021	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021	ber 2021
2.2	Preparing material for PM training courses	16	4x4=	4x	4x	4x								
2.3	Creating material for providing language support for teaching staff				4x	4x	4x	4x						
2.4	Preparing guidelines for the technological enhancement of teaching and learning	16	4x4=	4x	4x	4x								
3.2	PM training of teaching staff	16				4x4=	4x4=	4x4=	4x4=			4x4=	4x4=	4x4=
3.3	Training of teaching staff for using new educational technologies					4x4=	4x4=	4x4=	4x4=			4x4=	4x4=	4x4=
3.4	Training for teaching and academic writing in English											4x	4x	4x







3.5	Development of structure and content of courses for students and young teachers		4x	4x	4x	4x	4x	4x	4x					
3.6	Approval/Accreditation of new/modified master study and continuing professional development courses		4x										4x	4x
3.7	Implementation of approved courses				4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
4.1	The integration of online technologies into traditional courses		4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
4.2	Developing systems for electronic testing				4x4=	4x4=	4x4=	4x4=	4x4=	4x4 =	4x4=	4x4=	4x4=	4x4=
4.3	Forming online labs		4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
5.3	Preparing and analysing quality reports		4x	4x4=	4x	4x4=	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=
5.4	Organising inter-project coaching								2x	2x				
5.5	Organising external monitoring				2x2=	2x2=								
6.1	Creating the project website	48	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
6.2	Printing and distributing promotional material	36				4x	4x	4x	4x	4x	4x	4x	4x	4x
6.3	Disseminating reports on the project achievements		4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x







6.4	Organising popularisation lectures		4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x
6.5	Developing a Rulebook on CPD of teaching staff		4x 4=	4x 4=	4x 4=	4x	4x	4x	4x	4x	4x	4x	4x	4x
6.6	Developing Strategy for the support and on-going improvement of the quality of T&L								4x 4=	4x 4=	4x 4=	4x	4x	4x
6.7	Developing a unified questionnaire								4x 4=	4x 4=	4x 4=	4x	4x	4x
7.3	Organising meetings of the LCT	8				4x					4x			
7.4	Creating the PAP	48	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=
7.6	Performing regular financial administration	48	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=
7.7	Doing regular coordination activities	48	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=







	Activities	Total												
Ref.nr/ Sub-ref	Title	duration (number of weeks)	December 2022	Januar y 2022	February 2022	March 2022	April 2022	May 2022	June 2022	July 2022	August 2022	Septem ber 2022	October 2022	November 2022
3.1	Organising the Workshop on innovative T&L methodologies and pedagogical approaches											4x 4=	4x 4=	4x 4=
3.2	PM training of teaching staff		4x4=	4x4=	4x4=	4x4=	4x4=	4x4=	4x4=					
3.3	Training of teaching staff for using new educational technologies		4x4=	4x4=	4x4=	4x4=	4x4=	4x4=	4x4=					
3.4	Training for teaching and academic writing in English		4x	4x	4x									
3.5	Development of structure and content of courses for students and young teachers		4x	4x										
3.6	Approval/Accreditation of new/modified master study and continuing professional development courses		4x	4x										
3.7	Implementation of approved courses		4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
4.1	The integration of online technologies into traditional courses		4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
4.2	Developing systems for electronic testing		4x	4x	4x	4x	4x	4x	4x	4x	4x	4x		







4.3	Forming online labs		4x											
4.4	Preliminary analysis of performance indicators					4x	4x	4x	4x	4x	4x	4x	4x	4x
5.1	Establishing QAMB	16	4x 4=	4x 4=	4x 4=	4x 4=								
5.2	Establishing internal work quality standards and procedures	24	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=						
5.3	Preparing and analysing quality reports	32					4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=
5.5	Organising external monitoring												2x2=	2x2=
6.1	Creating the project website	48	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x	4x
6.2	Printing and distributing promotional material	36				4x	4x	4x	4x	4x	4x	4x	4x	4x
6.3	Disseminating reports on the project achievements		4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x
6.4	Organising popularisation lectures		4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x
6.5	Developing a Rulebook on CPD of teaching staff		4x 4=	4x 4=	4x 4=	4x	4x	4x	4x	4x	4x	4x	4x	4x
6.6	Developing Strategy for the support and on-going improvement of the quality of T&L		4x 4=	4x 4=	4x 4=	4x	4x	4x	4x	4x	4x	4x	4x	4x
6.7	Developing a unified questionnaire		4x 4=	4x 4=	4x 4=	4x	4x	4x	4x	4x	4x	4x	4x	4x
7.3	Organising meetings of the LCT	8					4x				4x			









7.4	Creating the PAP	48	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=	4x	4x	4x 4=
7.5	Preparing interim and final reports												4x 4=	4x 4=
7.6	Performing regular financial administration	48	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=					
7.7	Doing regular coordination activities	48	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=	4x 4=					







# Schadule of the following activities:

Activity N°	Activity Title	Start date	End date	Place	Description of the activity carried out
2.2	Preparing material for PPM training courses	March, 2020	December 15 <sup>th</sup> , 2020 January15th, 2021	Serbia, Albania, UGENT, UGR	This activity is related to the preparation of printed and electronic materials for psychological, pedagogical and methodological (PPM) training courses. The teachers of pedagogy and teaching methodology, who will later on during the project implementation carry out training courses within the WP3, have started working on preparation of educational materials using various online platforms and tools. First working drafts of educational materials have been designed. Teachers from specialised departments at UGENT and UGR, will use online platforms and to for share their knowledge and skills and helping in preparation the program and learning materials for upcoming training courses.
2.3	Creating material for providing language support for teaching staff		January 30th, 2021	Serbia, Albania	Printed and electronic material for providing language support to professional development of teaching staff are being prepared during this activity. The project staff is using the material that has already been developed by the project FUSE (TEMPUS project, coordinator UNI) as a baseline for this activity, and it is being used and adapted to the specific needs of teaching and academic writing in English in the field of natural and mathematical sciences. The teachers are using various online tools to draft, adapt and refine the working materials.
2.4	Preparing guidelines for the technological enhancement of T&L	March, 2020	December 15 <sup>th</sup> , 2020 January15th, 2021	Program countries: UNIOVI, UMB,	Guidelines and instructions for wider integration of ICT in teaching and learning are being prepared. Teachers who will implement training courses for using new educational technologies later in the project have started working on the programs and teaching materials onlinewith the help of partners from Banska







			Serbia,	Bystrica and Oviedo. The experts will present their experiences in using
			Albania	modern technologies in T&L by using online tools and methods.
3.1	Organising the	February 10 <sup>th</sup> , 2021	ONLINE	The Workshop will be organized online.
	Workshop on			The objectives of the activity are:
	innovative PPM			•to disseminate the latest achievements concerning teaching
	approaches			methodology in higher education, modern pedagogical approaches and
				technology enhanced teaching and learning
				•to raise the general awareness of stakeholders from the partner
				countries about the necessity of changing ways of teaching and learning
				in higher education, and importance of using the contemporary
				methodologies, psychological and pedagogical approaches and
				educational technologies in teaching and learning
				Contributions of the participants will be recorded during the workshop
				and the proceedings of the workshop will be published.
3.2	PM training of	May 15 <sup>th</sup> , 2021 (first	online;	The first series will be organised at the PC HEIs and the trainers will be
	teaching staff	and second series)	Serbia,	teachers of PPM from these HEIs.
			Albania,	In the second series of training courses instructors will be teachers from
			UGENT,	UGENT and UGR. The courses will be held in two parts: for Serbian
			UGR	trainees and for Albanian trainees) and the lectures will be monitored via
				online tools and applications and via the video conference (5 days).
3.3	Training of teaching		online;	The first series will be organised at the PC HEIs and the trainers will be
	staff for using new		Serbia,	teachers of computer science from these HEIs.
	educational		Albania,	In the second series of training courses instructors will be teachers from
	technologies		UNIOVI,	UNIOVI, UMB and UO. The courses will be held in two parts: for Serbian
			UMB, UO	trainees and for Albanian trainees) and the lectures will be monitored via
				online tools and applications and via the video conference (5 days).
3.4	Training for teaching	June 30 <sup>th</sup> , 2021	online;	Based on the teaching and learning material prepared within the activity
	and academic writing		Serbia,	2.4 training courses will be organised, with trainers who are lecturers of
	in English		Albania	English at the corresponding PC HEIs.







3.5	Development of structure and contents of courses for students and young teachers	May, 2020	Jun 2020, October 2021, May 2021	Serbia, Albania	<ul> <li>Within this activity, structure and content of the new/modified courses at the PC universities will be introduced with the aim of strengthening competences of young university teaching staff in pedagogy, psychology, methodology and technology enhanced education, based on new knowledge and skills acquired through the training courses instructed by EU experts. Some of new courses that are prepared: <ol> <li>Interactive tools for online learning.</li> <li>Digital media in blended learning</li> <li>Development of platforms for blended learning</li> <li>Virtual classrooms</li> <li>Modern didactic principles</li> <li>Education of children and adolescents with special needs</li> <li>Innovations in teaching</li> <li>Educational software</li> </ol> </li> <li>Some methodical subjects will be modernized at each PC University in the field of natural and mathematical sciences.</li> </ul>
3.6	Approved/Accredited new master courses and continuing professional development courses	September 2020	Jun 2020, October 2021, May 2021	Serbia, Albania	This activity has been started and during the activity the team is doing on preparation documentation for the approval or accreditation event.
4.1	The integration of online technologies into traditional courses	February 2020	During the whole project life	Serbia, Albania	Within this activity pilot projects will be launched, for the integration of online technologies into a certain number of traditional courses at the PC HEIs in all areas of natural and mathematical sciences. The role of these pilot projects is to demonstrate the benefits of using online technologies in teaching and learning, and to encourage a wider circle of teachers and teaching assistants to use these technologies themselves. The use of online learning platforms should allow students easier and







					faster access to the learning material and relevant information, access at any time, as well as better understanding and more efficient learning. That will also contribute to the realization of the active role of students in the learning process, individualization of learning and better communication between students and teachers, which will lead to the transition from teacher-oriented to student-oriented approach to learning.
4.2	Developing system	June. 2020	Ongoing activity	Serbia, Albania	A team of experts in information technology and pedagogy from the partner institutions (not necessarily the same as in Activity 4.1) in
				, ilouniu	cooperation with teachers of particular subjects, will propose
					methodological and software solutions for the development of systems
4.3	Forming online labs	November 2020	Ongoing activity	Serbia, Albania	Within this activity pilot projects for the integration of online technologies into a certain number of laboratories at the PC HEIs will be launched. A team composed of experts in information technology from the partner institutions and teachers who plan to integrate online technologies into their laboratory exercises will examine specific needs and opportunities of these laboratories, propose methodological, hardware and software solutions for such integration and monitor the realisation of the pilot projects. In the realization of this activity equipment purchased from the project budget will be used.
4.4	Preliminary analysis of performance indicators	June 2020	Ongoing activity	Serbia, Albania	This activity is focused on defining the methodology that will be used in the analysis of performance indicators of new teaching and learning methods introduced within activities 4.1-4.3, and then, a preliminary analysis of performance indicators will be conducted and the results of
					the analysis will be published in the form of a report.



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# ANNEX II to the quality report NEW WORK PLAN





# Additional information about the project based on European Commission recommendations and requests

The Covid-19 pandemic hit us very hard, with almost every one of us in Serbia falling ill or being around infected people and, sadly, one of the members of the project team, professor Zoran Stankovic from the University of Nis, lost the battle. Due to Covid-19 pandemic, we were unable to resolve foreseen project activities in person, thus we had to resort to the online learning methods. At first, we were skeptical about how that change would influence the effectiveness and quality of these activities, but we are happy to report that the results were more than satisfactory. Many bachelor and master courses at PC universities were forcibly modernized to fit the new requirements and a large number (about 500) of students have filled a questionnaire about their views on the current methods of T&L.

## Updated workplan adapted to the Covid situation

Please, keep in mind that the TeComp project consortium had reached a decision to request an extension of the eligibility period.

### WP2 Upgrading educational infrastructure at the PC HEIs

Covid-19 had prevented us in progressing further from the planning stages for Activities 2.2 and 2.4.

The tasks of Activity 2.2 are related to preparation of printed and electronic material for psychological, pedagogical and methodology (PPM) training courses.

Originally, what we had in plan was for a few people from Serbia and Albania to travel to Granada and Ghent to get acquainted with their expertise and the skills they use in education. The training materials would then be made by the usage of their newly broadened knowledge. Instead of going with this approach, we were forced to organize the planned activities through webinars. We used many online platforms, such as Google Meet and Microsoft Teams. Since almost all the physical boundaries were lifted by this new method and the interest for the lectures which were presented by teachers from Granada was remarkably high, a large amount of people (around 60) was given the opportunity to participate in the Webinar, which took place from 2<sup>nd</sup> to 4<sup>th</sup> of December.

In addition to this, two other webinars about the usage of modern technologies in teaching and learning were held. The first was organized by the experts from Oviedo lasting for three days (December  $9^{th} - 11^{th}$ ) and the other one given by teachers from Banska Bystrica, starting on December  $16^{th}$  until December  $18^{th}$ .

The final planned webinar, related for the preparation of training material, will take place in January 2021 and the content of it has already been constructed.

Judging by the comments and what was written in the evaluation form the outcomes of the webinars were found to be satisfactory and useful to all participants. It seems that we drastically raised the



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awareness of the necessity to strengthen teaching competences in Serbia and Albania. Some of the attendants will start implementing the presented methods in their classes to elevate their cooperation with students immediately. Some teachers and assistants are not able to realise the importance of the usage of modern methods and technologies in education yet, since we are still far away from real online education. The detailed evidence regarding this will be available after all the Webinars are finished, along with the number of students impacted by the changes to these classes.

The final stage of the preparation of guidelines and instructions for the wider integration of ICT, as well as the usage of modern PPM methods in teaching and learning will be finished in accordance with our plan before the end of March 2021.Originally, Serbian and Albanian teachers were supposed to travel to Ghent, Granada, Oviedo and Banska Bystrica, but this plan never came into fruition due to the pandemic. Instead, division into teams populated by the professors of the same field of science, from Serbia and Albania, is planned in this stage. To successfully finish the preparation of the material, team members will be traveling between universities in their respective countries, if possible. Travel costs for this activity will be covered from the funds originally meant to be used for travelling during these activities. All materials will be available in English, Serbian and Albanian.

The adaptation of the material developed to increase English proficiency during the project FUSE (which was coordinated by the University of Nis) is nearing its end.

#### WP3 Professional development of teaching staff

The first series of training courses will be organised at the PC HEIs and the trainers will be teachers of PPM from these HEIs. Due to the situation with the pandemic it is not sure whether these trainings will be organized face-to-face or online. We hope that the completion of this activity could be achieved during late April or early May 2021.

In the second series of training courses, it was planned that instructors from UGENT and UGR visit PC universities and teach Serbian and Albanian trainees separately. The only solution, in these circumstances, is to organize trainings simultaneously to trainees from Serbia and Albania by using online tools and apps. These lectures will be monitored via online applications and video conference by all of the participants. This series was supposed to happen after the first one, according to the original project description, but, since the way of working has changed due to COVID-19, there is a possibility that some overlapping may occur. Coordinator from Ghent has already made a proposal, which states that training given by their experts would take place once a week, for a duration of 3 months, starting February 2021. All in all, this activity should be finished during the first half of July 2021. The third series of training courses was designed to give young university teachers and assistants who faired the best in the previous two activities an opportunity to visit Granada and attend more advanced courses. The resolution of this activity will play out as intended if the situation until the end of October 2021 allows it. If that is not the case, these courses will be organized as a mentor work monitored by experts from Granada. The afore-mentioned teachers and assistants would have a crucial role to play in enhancing modernisation of teaching and learning methods and tools at PC HEIs. Activity 3.3, which focuses on strengthening teaching competences and





usage of modern technologies, is planned to be realized in the same fashion at a similar time (almost simultaneously). The trainings, which are to be featured in this activity will be held by teachers from UNIOVI, UMB and UO. The best students will travel to Oviedo or be monitored by mentors from Oviedo, depending on what fate has in store for us. Hopefully, if this also goes as planned, it should end by the end of September as well.

Trainings designed to increase proficiency in the English language will be organized online by the teacher from University of Nis to all PC HEIs before the end of June 2021.

The lectures based on the prepared material will be organized at the faculties of partner institutions in order to raise students' awareness about the importance of active involvement in classes, rather than just passive listening, as well as about the necessity of the modernization of teaching and learning.

TeComp project has, in cooperation with Educational forum from Belgrade, created a questionnaire about the students' opinions on the quality of online teaching and learning. Over 500 students, all-across Serbian universities, participated and the results can be expected to come within the next two months.

In the scope of the third work package the curriculum development was planned and details of on-going activities for the curriculum development are included below, *as requested by EACEA*.

Almost all subjects at PC HEIs were forcefully modernised due to the necessity for usage of various online applications and tools brought by the pandemic. Thanks to this, teachers have already acquired some experience and improved their proficiencies in the usage of contemporary teaching methods. These forced changes of teaching and learning methods, clearly, do not represent the real online teaching and we are aware that our teachers need to be trained in the application of new methods and modern technologies in teaching.

Most of the teachers involved in the project are already ready to modernise their faculty courses by implementing PPM methods and open-source educational software in the field of natural sciences and mathematics, which they got acquainted with through the webinars held in December 2020. Through constant communication via mail and other social networks, the contents of these subjects were designed and sent for regular accreditation process at the Faculty of Sciences and Mathematics, University of Nis. We expect this process to be finished until the end of May 2021, which would place the starting time of the new programme at the October 2021 mark.

These new courses are planned to be introduced on both bachelor and master study programmes. These are as follows:

- Interactive tools for online learning
- Digital media in blended learning
- Development of platforms for blended learning
- Virtual classrooms
- Modern didactic principles
- Education of children and adolescents with special needs





- Innovations in teaching
- Educational software

The preparation of the material for the accreditation of Doctoral academic studies Methodology in the field of natural sciences, mathematics, and informatics, is going strong at the University of Novi Sad. The experiences gained through communication with EU partners were adjusted to the needs of education in the Republic of Serbia and are used for the reaccreditation of the doctoral studies (first ones currently) in the field of teaching methodology in natural sciences and mathematics. We single out items that directly correspond to new requirements:

- Multimedia technology in teaching
- Testing and knowledge check
- E-learning and distance learning
- Usage of modern ICT in teaching
- Didactic-methodical research in mathematics teaching
- Modern teaching tools
- Educational software

The final decisions of the academic council of the Faculty of Sciences and Mathematics and the Senate of the University are expected to be adopted by the end of December 2020, material will be sent to the accreditation commission during January 2021 and the expectations are that the first generation of students enroll the new study programme in October 2021.

The introduction of similar courses, at the academic studies of the Faculty of Physics in Belgrade, is also planned (the preparation of documents for their regular accreditation process is starting soon).

December 2020 marked the beginning of the process of formation of Center (platform) for development of the education of natural sciences, mathematics, and computer sciences at the UNS. This virtual platform will be used by all partners in Serbia and Albania and it will contain material designed to be used by teaching staff on all levels of study with the special highlight on cross-course competences and requirements of the 21st century. The platform will be available for all teaching staff to use as early as March 2021.

The modernization and upgrading of the existing courses from the didactically-methodological group of subjects will be implemented at all PC HEIs. The academic council of the corresponding departments at Faculty of sciences in Kragujevac adopted these modernized courses as incremental changes of plans and study programmes. Novi sad will follow soon.

Novi Sad:

- Methodology of mathematics 1
- Methodology of mathematics 2
- Contemporary educational tools
- Research in education
- School practice 3

Kragujevac:





- Educational software
- Innovations in mathematical teaching

Numerous other courses will be changed by the implementation of new methodologies and tools in all partner universities in Serbia and Albania starting the next semester. A list of these courses will be available on the platform, as well as the project website will be available before February 2021. The early number of students who will attend these modernized courses will be shown, based on the

number of students registered for each course, very soon.

As we have previously mentioned, online technologies were integrated into a significant number of traditional courses at PC HEIs. Forced by the urgent circumstances, most of the university teachers have already started using online technologies and realised the benefits of doing so.

#### WP4 The formation of online learning environment

Each university in Serbia and Albania, according to specific needs of education, is suggested the suitable online learning platform that is used as a basis for designing new technology-enhanced courses, during last year. A team of experts in information technology have started the adaptation of the platform "LearningKey" (https://info.learningkey.app/) to the project needs, and later, to the special requirements of teachers and courses in the field of natural and mathematical sciences at PC HEIs. On this platform, the impact of the project on the number of students attending the modernized courses over time, both during and after the project life, will be clearly visible. The use of this online learning platform should allow students to access the learning materials easier and faster at any time. Pilot courses will be recorded and launched on the platform before July 2021. An electronic testing system has been created by using Google and Microsoft Teams forms. The self-testing questionnaires created by the professors at PC HEIs in the field of natural sciences and mathematics will be uploaded to the "LearningKey" platform, which will enable students to manually check their knowledge wherever they are, even on the go.

Some pilot courses (projects), for the integration of online technologies into a certain number of traditional courses at the PC HEIs in all areas of natural and mathematical sciences, will be launched to the platform. The role of these pilot projects is to demonstrate the benefits of using online technologies in T&L.

A very important part of higher education is student evaluation. Electronic testing is one of the ways to improve this aspect of higher education, and in the corresponding activity, systems for electronic testing of students are starting to be developed and they will be implemented as a part of the LearningKey platform. A team of experts in information technology, and pedagogy from the partner institutions in cooperation with EU experts in particular subjects, will propose methodological and software solutions for the development of systems for electronic testing and monitor the creation of these systems. Questions on the tests will be randomly chosen from the database of questions (for each student individually) that will be created as early as October 2021.

Laboratory exercises often require complex and expensive laboratory equipment, and many higher education institutions are not able to provide enough quality equipment, which represents a significant



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handicap for the students of these institutions. When higher education institutions are ready for cooperation, this problem can be solved by using online technologies which will enable students to participate in experiments from remote locations. The equipment necessary for the realisation of this activity is purchased from the project budget. Teachers who plan to integrate online technologies into their laboratory exercises proposed hardware and software solutions and pilot projects for the integration of online technologies into a certain number of laboratories at the PC HEIs will be launched.

#### WP5 Quality assurance and monitoring

The preliminary analysis which will be the first step in the further analysis of performance indicators of the innovations introduced in the process of teaching and learning at the PC HEIs, will be realised before March 2022 (with hope that EACEA extends the project deadline because of COVID-19 situation which greatly increases the difficulty of project activities). The analysis will be continued after the completion of the project cycle.

Qualitative reviews are planned to be conducted twice a year, based on the internal QA reports presented by WP leaders to the QAMB (Quality Assurance and Monitoring Board) and UNIKO (University of Korca). All the reports were not achieved on time due to difficulty of cooperation, but all the partners are regularly informed about the issues related to project quality. Once we got used to the situation the work is greatly improved, and all the planned activities are re-arranged and re-defined.

In order to get an external feedback of the project, inter-project coaching will be organized with NETCHEM project, which was finished in July 2020, for mutual exchange of accumulated expertise. If the situation allows, the meeting will be held live, and in that case, with the aim of saving the money, it will be held at the same time as a LCT meeting. On the other hand, if necessary, it will be organised through video conferencing.

Quality control of the project activities and results is planned to be performed both at the mid-term and at the end of the project life, by an expert who will establish independent comprehensive monitoring evaluations. Since collecting partners' documents was very difficult, due to the working conditions during the last year, the financial revision is agreed be performed in January 2021.

#### WP6 Dissemination and exploitation

In order to ensure the dissemination of information, the project website was created, maintained and regularly updated. Sadly, the COVID-19 pandemic left us without any tech support for a long time (a person charged with this duty came down with the virus and resigned from his position) and even though we are now back and working at full force, the newly redesigned version of the website still has a few holes to be patched. The project administration platform was, at points, updated manually by both us and partners, but all in all it had suffered a similar treatment. We are happy to report that this issue is solved now, and that the platform also gets regularly updated (we are still waiting for a few signed documents, which are to be provided by our EU partners though).





\* Due to the request from EACEA, the platform is now accessible under the **username: EACEA** and password: **TeComp!2021**.

Besides the website, we have designed promotional materials in the form of leaflets, flyers, booklets, files, plastic bags, diaries, bumpers, posters, and biros. Once the last phase comes to an end, the training materials will also be printed and made available on the websites of PC universities. The promotional material will be distributed to all project stakeholders via online and in-person promotional presentations and at the planned workshop (we have not yet decided on if it will be held online or not), as well as videos.

The joint reports of the project activities have been created and they are available at the project website and will be distributed at next planned promotional opportunities.

One of the main goals of the project is to raise awareness among teaching staff in PC HEI's about the necessity and positive effects of using online learning. For most teachers, this has already been achieved, in which a significant role was played by the shift from classical face-to-face classes to remote teaching in our HEI's, in response to Covid - 19. However, in emergency circumstances, that shift was most often too sudden, without enough time for serious preparations, which led to an emergency remote teaching that is essentially different from the design and delivery of courses that were always intended to be delivered online. In the scope of WP6 we plan some additional popularisation lectures (that were not included in the original plan), which will clearly emphasize that difference and help in understanding how to effectively design, develop, and deliver high-quality instruction online.

No popularization lectures to the general public were held to date (they are planned to happen at Q3 and Q4 of 2021), but many promotional steps (including, but not limited to the presentations organized for the faculty professors at the university of Belgrade and the examples of good practice by the project team members, one of which has received a prestigious award) have been taken.

The rulebook on continual professional development (CPD) of teaching staff is entering the creation phase in January 2021 at the coordinator institution, while that phase is coming to a close in Novi Sad, as this rulebook has been integrated into the functioning rulebook of the afore-mentioned Centre of methodology of teaching natural sciences, mathematics and computer sciences. Other PC HEIs will follow soon.

Near the end of the project life, the strategy of improving the quality of teaching and learning based on the information acquired through questionnaires catered to both students and professors who have familiarised themselves with modern methodologies will be created. This activity will have a long-term impact on the process of raising awareness of teachers and students about the necessity of strengthening teaching competences in higher education.

TeComp project has, in cooperation with Educational forum from Belgrade, created a questionnaire about the students' opinions on the quality of online teaching and learning. Over 500 students, all-across Serbian universities, participated and the results will be announced soon.





Once the new modernised courses are implemented, a uniform questionnaire will be developed. This questionnaire will be designed to ensure that we receive objective evaluation of teaching staff, new courses and teaching and learning in general. This questionnaire is to be used in all PC institutions involved in the project.

#### WP7 Management

Two CMT meetings were organised between the kick-off meeting and now. The first one was held in Granada in November 2019, with a small latency due to the inability to find a date suitable to all members of the coordination team. The second was organised online in June 2020 and the meeting report can be found on our website.

Three local committee team (LCT) meetings have been organised. One took place in Belgrade in July 2019, one in Novi Sad in January 2020 and the last one was held online on Thursday, December 24<sup>th</sup>, 2020.

The project administration platform (PAP) has been successfully created and is now regularly updated. More info on this topic can be found above.

Interim report has been submitted on time, before May 15<sup>th</sup> 2020, and with this document we are answering EACEA recommendations.

# Inform us of the state of play of the equipment purchase and installation in the Albanian universities.

The predicted equipment, in Albanian universities, was purchased during May 2020, and it has already been installed and is widely in use in teaching at UGJ and UNIKO, now.

# Give access to the Agency to the project management platform so to assess better the progress of the project.

The project administration platform is now accessible to the Agency under the username: EACEA and password: TeComp!2021.

# The consortium should define a strategy and selection criteria for workshops and trainings in order to reach the appropriate target group.

In the project application we expected a wide target group (1500 teachers and 15000 students) and we have defined the strategy and the selection criteria to reach the appropriate individuals, who can capitalise the impact and sustainability of the project. The criteria that every teacher participating in the webinars corresponding to the preparation of training material, as well as those who are to train young assistants and assistant professors is that they themselves are proficient/experts in pedagogy, psychology



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and/or methodology of teaching and learning in the field of natural sciences, mathematics and computer sciences or are highly aware of the necessity of straightening teaching competences and modernisation of education. For these activities, only experienced associate and full professors have been chosen. All the trainees are chosen based on age and experience (assistants and younger professors with less experience who did not attend any pedagogical and methodological courses). Attendance of the trainings will not be obligatory, at least not currently, and it will therefore be necessary to conduct a broad campaign to raise awareness among the teaching staff of the necessity of continued efforts to improve its teaching capabilities and on the benefits of it. The way we wanted to motivate teachers and teaching assistants to actively participate in the training program was to give them an opportunity to perform a part of their professional training attain higher levels of experience in the certain EU partner universities. In such circumstances, we will try to motivate them by making grading criteria for the appointment to higher teaching positions in Serbia, which will take the quality of their teaching into account. Up until now, the only criteria which mattered during these appointments in Serbia was science, but we suggest that young teavhers and assistants must also finish some courses in pedagogy, psychology and methodology. This topic was brought up during the last LCT meeting held on Thursday, the 24<sup>th</sup> of December and partners managed to brainstorm many ideas on how to introduce these criteria.

To ensure that the target groups are available even after the completion of the project, we will initiate the preparation and adoption of two important documents. The first of them is the Rulebook on continuing professional development of teaching staff. After its adoption, our program will grow into a regular program of continuing professional development of teaching staff that will continue even after the completion of the project. The other one is the Strategy for the support and on-going improvement of the quality of T&L.

### Upload the project outputs and maintain updated the website.

In order to ensure the dissemination of information, the project website was created, maintained and regularly updated. Sadly, the COVID-19 pandemic left us without any tech support for a long time (a person charged with this duty came down with the virus and resigned from his position) and even though we are now back and working at full force, the newly redesigned version of the website still has a few holes to be patched. Almost all outputs of the project will be uploaded to the website before the Agency revision.

# The comments of the Agency letter on the financial statement.

We have noted that you have reported expenditure linked to the organisation/catering of meetings and events. Please note that in order to prevent double funding by the grant, catering and hospitality costs (e.g. during project events) for participants receiving Costs of Stay cannot be covered by subcontracting. Under no circumstances should these costs be charged to the project twice.





# WORKING PLAN

In the coming period, work on the implementation of the remaining activities within the work package WP2 will await us.

## WP2 – Upgrading educational infrastructure at the PC HEIs,

The beginning of the work on the realisation of activities within the work packages

### WP3 – Professional development of teaching staff WP4 – The formation of online learning environment,

are in front of us, too.

Within the work package WP2, after the equipment purchasing and webinars given by colleagues from Granada, Gent, Oviedo i Banska Bystrica, we must continue the activities on

#### 2.2. Preparing material for PPM training courses i

#### 2.4. Preparing guidelines for the technological enhancement of teaching and learning.

These two activities are closely related to the implementation of appropriate activities within WP3 and WP4. Namely, the activity 2.2 consists of the basis for

#### 3.2. PPM training of teaching staff,

while 2.4 is the basis for the activity

- 3.3. Training of teaching staff for using new educational technologies,
- 4.1. The integration of online technologies into traditional courses,
- 4.2. Developing systems for electronic testing i
- 4.3. Forming online labs.

#### Hence, the implementation of all these activities should be planned together.

### Activities 2.2 and 3.2:

It is necessary that everyone who wants to participate in the implementation of these activities proposes topics that would be covered in the pedagogical-psychological-methodological (PPM) training courses, as well as topics that would be covered in the teaching material for these courses, which will be prepared in electronic form and printed in the form of a manual.

Our opininion is that the training material does not have to include absolutely all the topics that would be covered in the training courses.

#### Activities 2.4 and 3.3:





Within the activity **2.4** guidelines for wider integration ICT in teaching and learning are needed to be prepared. It is planned that this material be used within the framework of the implementation of activities **4.1-4.3**, and a part of the material would be used as teaching material for the training courses related to use of new technologies in teaching and learning, which will be implemented within the framework of activity 3.3. This material will also be prepared in electronic form and printed in the form of a user manual.

Therefore, it is necessary that everyone who wants to participate in the implementation of these activities proposes topics that would be covered in the training courses for the use of modern technologies in T&L, as well as the topics that will be included in the guidelines for the wider integration of ICT in higher education, within the activities **4.1–4.3**.

In accordance with the topics proposed within the activities 2.2, 2.4, 3.2 i 3.3, the multidisciplinary teams for the preparation of training materials and guidelines will be formed.

#### Activities 4.1, 4.2 and 4.3:

Within the activity **4.1**, it is planned to launch pilot projects for the integration of online technologies into a numerous of traditional courses. The role of these pilot projects is to demonstrate the benefits of usage of online technologies in teaching and learning and to encourage a wider circle of teachers and associates to use these technologies themselves. In order to emphasize the great diversity of models for the use of modern technologies in teaching and learning, it is necessary to offer several different scenarios for the integration of online technologies into courses.

It is planned to form a team that will analyze the specific needs of courses and teachers and propose suitable online learning platforms that will be used as a basis for designing new technologically improved courses.

It is necessary that everyone who wants to participate in the implementation of this activity submits the names of courses which would be innovated in this way.

Within the activity **4.2**, the development of a system for electronic testing, i.e., the adaptation of some existing systems to the specific needs of our courses is planned. A team of experts, in cooperation with teachers who are interested in the introduction of electronic testing systems, will propose appropriate methodological and software solutions, and oversee the creation of these systems.

# Here is necessary, too, for everyone who wants to participate in the implementation of this activity to submit the names of the courses within which he intends to introduce electronic testing.

As a part of activity **4.3**, it is planned to launch pilot projects for the integration of online technologies in some laboratories. A team composed of IT experts and teachers who intend to integrate online technologies into their laboratories will analyze the specific needs and capabilities of these laboratories and propose appropriate methodological, hardware and software solutions and monitor the implementation of pilot projects.



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It is necessary that everyone who wants to integrate online technologies in the laboratory submits the name of that laboratory and the courses for which laboratory exercises would be realized in that laboratory.

Our partner P11 (University of Ostrava, Czech Republic) has removed costs representing double funding from the declared subcontracting costs.

# We have noticed that some VAT amounts may have been declared to the project. In these cases, please note that each beneficiary concerned will need to provide a certification by the relevant tax authority that their institution is not able to recover these VAT amounts.

We asked our partner P11 to provide a certificate issued by the relevant tax authority that their institution is not able to recover the VAT amounts declared under subcontracting costs. If they are unable to provide such a certificate, the declared VAT will be removed from the subcontracting costs and will be treated as co-financing.

# We have also noted that you are declaring costs for stationary – office supplies. Please note that these costs must be covered by co-financing, they cannot be covered by Subcontracting.

Partner P11 has already removed the costs for office supplies from the declared subcontracting costs.

We are thankful to you for providing so much support and encouragement to us.