



First report on external evaluation of the TeComp project “Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences”

ERASMUS 598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP

The project specifies activities to improve the quality of higher education in the field of natural sciences and mathematics, through greater integration of modern pedagogical approaches, methodologies and technologies in teaching and learning in the PC HEIs.

However, I have not found an evidence in the outcomes about activities focusing on natural sciences and mathematics. The project addresses more general topics, without focusing on the specifics that natural sciences and mathematics include in offering the learning methodologies and technologies. I suggest that the project team should develop an approach and report activities which reflect pedagogical methods specific to natural sciences and mathematics in provision of learning material, since they need more content including experiments and other relevant observation-related content.

Analysis of the realized activities and outputs have shown that a lot of effort was realized to enhance professional competences and skills of teaching staff, use of sophisticated teaching tools. I recommend that the project team should clearly extract which of these are specific in the field of natural sciences and mathematics. I would also prefer if there is an evidence of efficiency of the use of these methods, and assess the classical methods comparing to the new learning tools which can prove the pedagogical method used in provision of learning material. For example, how much time would a student need to understand a certain concept (experiment) with classical instruction presentation (teaching) method, or with the use of new tools, applied as outcome of this project.

Beneficiary are 4 universities from Serbia (University of Kragujevac, University of Nis, University of Belgrade, and University of Novi Sad), and two from Albania (University of Gjirokaster and Fan S. Noli University of Korce), and 5 other EU partner universities (University of Ostrava, University of Oviedo, University of Granada, Ghent University, University Mateja Bela) form the project consortium. The consortium members have requested an extension of the eligibility period due to Covid pandemic. However, although, this was approved by the European Commission there is no indication about prolongation of the project duration on the project web site. I would also suggest to update the prolongation deadlines for each WP and task.

Report on achievement of project activities and outcomes

The first workpackage WP1 is entitled “*Preparation for strengthening teaching competences in the field of natural sciences and mathematics at the PC HEIs*”.

The reports of finalizing the some of the tasks is comprehensive and very detailed, on contrary for the other tasks.

Concerning the Task 1.1 Quantitative analysis of teaching competences of young, newly hired university teachers at the PC HEIs, I found missing the content page, which can help for easier navigation through the report. A major remark is that there is no summary and conclusions, so the report looks like a paper full with tables and numbers without overall conclusion or assessment analysis in all consortium members, and without conclusion on

what is missing for beneficiaries, which learning method or technology is beneficial, what are the missing competences and skills of teaching staff, etc.

Two partners have not realized the self-assessment activities.

I have not found a report of realized survey of students, although there is a survey template attached on the web site.

The same report is provided for the Task 1.2 Detailed analysis of the use of modern educational technologies in teaching and learning at the PC HEIs,

Although mentioned in the title, only one partner has realized a self-assessment on the PPM knowledge, and there is a total of 5 EU partners.

I would recommend that the WP leader should separate the reports for T1.1 and T1.2 (the later one is just three pages, and the first one 67 pages, and include the missing items (table of contents, page numbers, overall conclusion for the majority of consortium members, conclusions and recommendations).

There is no report for the task 1.3. Reviewing experiences in the use of PMT in T&L at the EU HEIs.

Referring Task 1.4. Performing a comparative analysis based on collected data, there is a report which is the same one as in T1.1 and T1.2. I recommend that this report contains only a report on how the activities were performed, including discussions about analyzed comments from held webinars and evaluations, and also include conclusions and recommendations from the analysis realized in T1.1 and T1.2 and also from the outputs from meetings held according to this activity. In addition, the following missing items are identified: page numbers are missing, heading ENTRY should be Introduction, PPM abbreviation should not be used in the title, and it needs also to be explained, add a page with abbreviations.

There is no report for the task T1.5. Defining necessary measures and actions for the modernisation of T&L

As a summary, it is good to provide an evaluation report for the whole WP separate from the report of realized activities and outputs. Also, provide an evidence that all partners have participated in the workpackage with corresponding outputs, ensuring that all specified activities are realized.

The second workpackage refers to WP2. Upgrading educational infrastructure.

Referring to the Task T2.1. Forming technology-enhanced learning spaces, there are only photos of equipment installed at three universities. There is no information on what is purchased (summary info like 30 computers for a specific lab), and what is the value of the equipment purchased within the project. There is no information on what happens with other partners.

Reporting was provided for Task T2.2. Preparing material for PM training courses

The report Webinar Granada contains links for agenda, participants list, presentations, evaluation and gallery of photos. There is no report on what was the purpose (goals and objective), or discussion on evaluation with recommendations. Also, there is no explanation, what criteria were used for selection of participants (and presenters), or if all invited participated, since there is a mismatch in the number of participants (for example 1 from Novi Sad and 9 from Nis).

Analysis of evaluation shows that participants were satisfied and the webinar has met their expectations, but it is not explained what were their expectations and if the overall goal to organize the webinar has been reached.

These remarks are valid also for the Ghent webinar, and in addition, there is no evaluation from participants for this webinar.

There is no report for task T2.3. Creating material for providing language support for teaching staff

Addressing the task T2.4. Preparing guidelines for the technological enhancement of teaching and learning, there are reports for webinars held at Oviedo and Banska Bistrica.

Although in comparison, to the previous webinars, there is a teachers' report, there is no overall report on the webinar that also includes evaluation, and overall conclusions from the organizer or task leader, also analyzing the fruitful comments by participants.

No activities were reported for WP3. Professional development of teaching staff that consists of the following activities:

- 3.1 Organising the workshop on innovative T&L methodologies and pedagogical approaches
- 3.2. PM training of teaching staff
- 3.3. Training of teaching staff for using new educational technologies
- 3.4. Training for teaching and academic writing in english
- 3.5. Development of structure and content of courses for students and young teachers
- 3.6. Approval/accreditation of new/modified master study and continuing professional development courses
- 3.7. Implementation of approved courses

No activities were reported for WP4. The formation of online learning environment, including the following tasks:

- 4.1. The integration of online technologies into traditional courses
- 4.2. Developing systems for electronic testing
- 4.3. Forming online labs
- 4.4. Preliminary analysis of performance indicators

The workpackage WP5 is entitled "Quality assurance and monitoring".

There is no report for the first task T5.1. Establishing QAMB

The provided report for the second task T5.2. Establishing internal work quality standards and procedures includes the quality manual.

Although roles and responsibilities are assigned for project coordinators, task or workpackage leaders, still this manual is missing elaboration of decision making procedures. It needs to explain how decisions are made on the central management level, or local coordinating team. In addition, it should specify what corrective actions are taken to overcome problems initiated by project realization, partner communication etc.

The report is not addressing partner communication methods and frequency of meetings, also how the meeting agenda is compiled or which issues are analyzed on these meetings.

Also, the report is missing table of contents. A. minor remark is to check the language translations, for example, Quality responsibilities – should be management responsibilities

A major remark is that QAMB should also make reports of their meetings and the manual specifies Qualitative reviews of each WP will be conducted twice yearly.

There are no reports for the remaining activities:

- 5.3. Preparing and analysing quality reports
- 5.4. Organising inter-project coaching
- 5.5. Organising external monitoring

No activities were reported for WP6. Dissemination and exploitation

- 6.1. Creating the project website
- 6.2. Printing and distributing promotional material

- 6.3. Disseminating reports on the project achievements
- 6.4. Organising popularisation lectures
- 6.5. Developing a rulebook on cpd of teaching staff
- 6.6. Developing strategy for the support and on-going improvement of the quality of t&l
- 6.7. Developing a unified questionnaire

No activities were reported for WP7. Management including the following tasks:

- 7.1. Setting up PMBs and signing partnership agreement
- 7.2. Organising the kick-off meeting and meetings of the CMT
- 7.3. Organising meetings of the LCT
- 7.4. Creating the PAP
- 7.5. Preparing interim and final reports
- 7.6. Performing regular financial administration
- 7.7. Doing regular coordination activities

I strongly recommend that the web page containing description of workpackages and realized activities to be updated with the links to outputs which are specified in the web page documents. Now the web page looks like an unorganized web site, with documents which are not linked from locations where one should expect.

Another major remark is that some of documents do not contain essential data or contain misleading data. For example, there is a working plan in the documents, but it does not contain details who prepared it, when it was released, who made decision for this, what is the release date and version number etc. It should be also in the standard format as the other reports and manuals.

Similar remarks are given for EC recommendations and requests addressing Covid pandemic. Now one can just see a document entitled Reworked summary and outcomes.

There is a report on the use of equipment in Albania, but this should also be linked in the Workpackages. Also, there are no reports about other partners.

Missing version numbers on documents might be a serious problem. For example, there is one link to quality manual in the workpackages and another in documents identified as internal quality standards and procedures.

There is a quality report addressing the kick-off and other meetings. They are missing several items, including explanation of the purpose, goal and objectives, conclusions made on the meeting, and recommendations for further actions.

For example on a local coordinating team meeting in Belgrade, there was a review of a report on current state, without conclusions and recommendations. Particularly, one item mentions preparation of a joint report, without conclusion or outcome (which version of report is drafted or where it can be found). This report contains only agenda and that some topics were discussed, no details on participants, outputs, conclusions and recommendations.

Some discrepancies appear in the provided Report on the practice in teaching and learning at the EU HEIs. It specifies that version v.0.4 is for internal use, and this report is publicly available on the web site. It also addresses WP5 – Quality plan, followed by lead organization of WP7 and I found it that it refers as an output of WP1 (task T1.2 or T1.4).

A major remark is that Table of achieved and planned results does not correspond to what is available on the web site. For example, one cannot find any of 6 reports on student survey results.

Overall project relevance

Overall project results are relevant to the modern trends in high education, and mainly *correspond* to planned activities and deliveries within the project proposal, although due to Covid pandemic a lot of activities were prolonged.

However, the following items are missing in current reports.

- No evidence of how the project will indirectly involve a large number of teachers and teaching assistants (around 500) and learners (around 1.500).
- No evidence on activities that target gender equality or reducing inequalities
- No evidence of how the project will deliver new/modified courses in psychology, pedagogy, methodology of teaching, and technology enhanced learning
- No evidence if T1.1 and T1.2 have made been used to make a strategy what skills and competences are missing and how they will be addressed within the project
- No evidence of which pedagogical and methodological principles and new modes of teaching and learning are addressed by the project
- No evidence on which methodology and platforms for wider integration of ICT in teaching and learning are addressed within the project, there is no specification what is meant by wider integration, is there assessment what is in use at this wider environment and how this will be integrated.
- No evidence of how the project targeted the lifelong learning
- No evidence of how the project outcomes address transition from a teaching-oriented to learning-oriented approach, and also which methods are used to provide flexible approach and individualization, including better communication and interaction between teachers and students.

Overall project efficiency

Not all the results and execution details of realized activities are reported to support overall project efficacy that all planned tasks and activities have been realized by transforming the project inputs into efficient outputs, and if they were finalized on time (besides those which were approved to be prolonged).

Besides the major remarks, I cannot observe severe deviations, and the delays are justified due to Covid pandemic.

Overall project effectivity

Not all project outputs are reported or linked from the expected location in the WP web page, where one can read the management reports of realized activities and provided outputs. This makes a problem matching the fulfilment of project specific objectives. The provided report on fulfilment of activities does not contain specific statistical parameters, it is fulfilled with declarative estimations of small or high extents, which is not relevant to make further conclusion.

I would recommend that all the outputs to be updated and new versions delivered considering the remarks in this report.

Overall project impact

One can observe that most of the activities were performed, but they are not properly reported and outputs documented. The project realization is prologued and there is a chance to improve the outputs in expected form.

My personal impression is that the project will have a great impact as it is specified in the project proposal if the corresponding activities are reported and provided outputs formatted according to the quality manual.

The following major remarks need to be realized by improving the quality of the corresponding outputs.

- I have not seen any specifics for learning environment targeting mathematical and natural sciences.
- It is listed that 300 teachers and 680 students beneficiaries are trained and I have not found any evidence in the participants lists of the organized training sessions and events. Please provide evidence.
- From the other side in the report you specify that students were involved in the project implementation to a small extent
- I advise to include administration staff that maintains the lab equipment or supports the provision of learning materials as direct beneficiary, since they are encouraged to use the new technology and methods.
- I advise not to specify wording to a very small extent in the report. Instead, use specific numbers, such as introduced 1 new course in the program that contains 40 courses, or introduced 2 new courses from 5 planned.
- I advise not to specify wording to a high extent in the report. Instead, use specific numbers, such as developed Memorandum of Understanding for 3 institutions, published 5 joint papers on new learning technologies in journal

Project sustainability

There is a dissemination and sustainability plan in documents, which is not linked in the WP web page.

The title page refers to WP1, and lead organization to WP7, while it should be part of WP6. Although, there is no associated activity for this, (no task specified in WP6 for this), this is an essential document and should probably be part of WP5.2 or just add a new activity in WP6.

In dissemination, I have not found any specified activity that addresses stakeholders and government officials (such as Ministry of Education), including personal meetings, rising awareness to introduce the outcomes in other relevant segments, initiating new national policies for introduction of new learning technologies, etc.

Also, the plan should specify a wider international dimension, including other beneficiaries not just from other universities from consortium countries, but also neighboring Western Balkans countries. At least you should invite them to participate on the webinars or dissemination events.

The part for sustainability is too declarative without any details. For example, “A great number of adopted legal and procedural documents will also create the obligation for the maintenance and regular updating of formed networking structures, services and databases.” It lacks a proper specification which documents or decisions will be brought, with appropriate deadlines, analysis and discussion are there any legal or legislative obstacles that prevent project outcomes to be realized or used in near future, what are the methods to solve them and specify deadlines. For example if digital textbooks are used are they allowed by the law etc. Is English language allowed to be used for video presentations? Are electronic learning technologies also practiced for exams? How do you reflect adopted pedagogical approaches within the TeComp outcomes?

Addressing financial sustainability, a focus should be set on if there are measures for those that prepare advanced electronic learning materials etc. What are the measures to be taken to

support maintenance of the lab and established learning technologies, and what is the budget that the University will support introduction, maintenance and upgrade of these technologies? Another big issue is “Having in mind the specificity that the most of the Serbian universities consist of independent faculties, the main effort will be devoted to foster the overall procedural frame and capacity building at the faculty level and their networking both horizontally (towards related faculties) and vertically (towards universities’ structures and nationwide).” As far as I know, all Serbian universities are integrated universities, and there are no independent faculties, so please specify measures that each University should take to foster the use of outcomes vertically from the University to the Faculty level, including the learning environment etc. The report should also contain a page with explanation or abbreviations, for example, CPD, etc...

About video materials in the corresponding web page, either cut those segments which are not licensed or do not write that you cannot share video materials. This is misleading and confusing.

Minor remarks to be corrected

Link for Korce partner (<http://www.unkorce.edu.al/en>) and for University of Gjirokastrës (<http://uogj.edu.al/en/>) are not working as provided in the list of partners logos. They need to be updated.

Numbers in some of tables from the provided reports are usually written aligned right (not left as text)

All reports and outputs should be formatted according to the provided template including missing information.

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