

Project Number 586060-EPP-1-RO-EPPKA2-CBHE-JP
Project title Excellence in Engineering Education through Teacher Training and
New Pedagogy Approaches in Russia and Tajikistan
Coordinating Institution Universitatea POLITEHNICA din Bucuresti

Project Implementation Report

Status 25 June 2020

Dear Madame/Sir,

Our reply is patterned on the key areas featuring in your email dated 3rd, June 2020

Consequently, this report has targeted the following seven areas:

- *quality assurance,*
- *opportunities to acquire skills in the methodology of developing courses,*
- *examples of courses/curricula/textbooks/manuals from EU,*
- *list of teacher competences,*
- *role/functions/activities of the EXTEND centres,*
- *Website, Dissemination, Role of the e-platform, participatory project management.*

We are ready to provide any further information if needed.

Best regards

Yours sincerely



Elisabeth Lazarou

Project Implementation Report

Status 25 June 2020

Table of Contents

Top 1: Quality Assurance	3
1.1 QA Plan with qualitative criteria against which the project progress can be assessed	4
1.2 Agreement on the structure and content of the teaching and learning package and on a quality assurance package	4
1.2.1 Structure and composition of the teaching and learning packages for courses	5
1.2.2 Overview: Course Development, EXTEND centres, Equipment status, Piloting Arrangements	8
Top 2: Opportunities to acquire skills in the methodology of developing courses	10
Top 3: Examples of courses/curricula/textbooks/manuals from EU	12
Top 4: List of teacher competences	12
Top 5: Role/functions/activities of the EXTEND Centres	13
5.1 Equipment for the EXTEND Centres	13
5.2 Role and function of the EXTEND Centres	13
5.3 Business plans	14
5.4 Activities of the EXTEND Centres	14
6. Website, Dissemination, Role of the e-platform	17
6.1. Website, Role of the e-platform	17
6.2 Dissemination of the project	17
6.3 Sustainability plan	18
6.4 Coursebook Publication	18
7. Participatory Project Management	19
8. Conclusions	19
8.1 How the remarks from previous monitoring have been addressed? Any problems?	19
8.2 What have been achieved?	19
8.3 Any deviations in the plan?	20
8.4. Have all the inputs been relevant for the project progress?	20
Top 9: Annexes	20

Top 1: Quality Assurance

1.1 QA Plan with qualitative criteria against which the project progress can be assessed.

The Quality Plan published in April 2019 details the range of data collection opportunities being considered for the EXTEND project. The initial focus was on the quality of interaction and definition of the project. The second phase that we are currently in has focused on the process related to the development of the teaching and learning materials and the initial pilot feedback. The final stage relates to the value of the teaching and learning materials and the impact of the EXTEND Centres themselves. By addressing these 3 discrete phases of the project the Team have been and will be able to demonstrate the cohesiveness of the collaboration, the quality of the resources that are being developed and ultimately the value and sustainability of the EXTEND Centres and their work beyond the lifetime of the project.

The philosophy of the Warwick University representatives in charge of developing Work Package 4 on Quality Assurance and Structure was to let participants “find their bearings” and explore different structuring solutions before imposing a rigid template in the final stages of course development. Although the data collection tools have been administered to coincide with the meetings, they are exploring the perceptions of the Project Team members over a longer period of time. Perceptions are certainly an aspect of the quality assurance, but outputs have also been an important focus as they will be a better measure of project success. The Quality Plan was written in such a way as to be very focused on results and sustainability.

The **Project Meeting at Warwick University** was planned for September 2019 and postponed to 11th – 15th 2019 of November because of financial management issues (see correspondence with Piia Heinamaki). For this period, the hotel and seminar center of the University of Warwick had already been booked, so the meeting was postponed to 2020. The Consortium agreed for **10th – 13th of March 2020**.

The aim and content of the Warwick meeting was to focus on the following:

- Quality Assurance
- The agreement of the online platform use for the courses,
- EXTEND Centres’ continual work,
- Sustainability of project results
- Planning of Summer Activity with students’ participation
- Feedback after courses piloting. Detailed information can be found in the minutes (see Annex).

During the online Management Board meeting in October 21, 2019, the consortium agreed to finalize the modules and arrange for a **meeting in Moscow at BMSTU held from 27th- 30th of November 2019**. The Moscow meeting was combined with the ITEE conference at BMSTU on 29 November, 2019 when the EXTEND project was also planned to be disseminated. Detailed information can be found in the minutes (see Annex).

Implemented activities (and deliverable outcomes)

- ✓ D 1.1: Report on monitoring of Russian and Tajik practices in teacher training, with a focus on teaching engineering disciplines – Analysis of PhD and teacher training programmes.
- ✓ D 1.2: Report on study of best European practices in teaching engineering disciplines and teacher competence enhancement.
- ✓ D 1.3: Survey Analysis: Report on the monitoring of Russian and Tajik practices in teaching engineering disciplines.

Project 586060-EPP-1-RO-EPPKA2-CBHE-JP – Reply to NEO Russia: Questionnaire on project implementation from June 3, 2020

- ✓ D 1.4: Competences descriptor of university teachers of Engineering disciplines
 - ✓ D 2.1 (A): Existing resources, staff and Infrastructure: Assessment and updating of existing infrastructure and facilities (EXTEND centres)
 - ✓ D 2.1 (B): Training materials for EXTEND Centres: Set of materials presented by EU partners during the project meetings that can be further used by EXTEND centres in their training activities.
 - ✓ D 4.1: Quality plan
 - ✓ - report 1 – Internal monitoring and quality control
 - ✓ - report 2 – Internal monitoring and quality control. First year of the project
 - ✓ - report 3 – Internal monitoring and quality control. Second year of the project
 - ✓ D 5.1 and 5.2: **Project on-line platform design and population (EN, RU, TJK)** After revision of legal issues on shared ownership of the planned on-line platform it was decided on PMB meeting that each PC university will use its own MOOC-platform or LMS to accommodate designed project MOOC and the project web-site will provide links to the PC universities MOOCs. So outcome D5.1 is transformed to **Project web-site design and population.**
 - ✓ D 5.3: Dissemination plan: Report on Dissemination, Exploitation and Sustainability
 - ✓ D 5.4: Sustainability plan which was initially part of the Dissemination Plan but later was transformed into specific document built around outcomes that are to be sustained after the project lifetime.
 - ✓ D 6.3: Project management plan and structures
- The deliverables will be uploaded to the new website under "results" during the month of July.**

The following activities and deliverables are required before the project is completed:

- D 3.1: Training program in modern teaching technologies for PhD students majoring in engineering disciplines (RU, TJK)
- D 3.2: Training program in modern teaching technologies for university teachers of engineering disciplines (RU, TJK)
- D 3.3: Course book on teaching methodologies of engineering disciplines (RU, TJK)
- D 3.4: Report on piloting of training programs in modern teaching technologies for PhD students and university teachers of engineering disciplines (EN, RU, TJK)
- D 3.5: Study visit of international students teams
- D 4.1: Internal monitoring and quality control 3rd year (30.06.2020)
- D 4.2: External monitoring and Final report (EN, RU, TJK)
- D 5.1: Project on-line platform design and population (EN, RU, TJK)
- D 5.2: Dissemination conferences and final conference (EN, RU, TJK)

1.2 Agreement on the structure and content of the teaching and learning package and on a quality assurance package

As referred to above, the Quality Plan was finalised in April 2019 following the initial definition phase of the project. This was done to ensure that the QA element of the project remained a 'live component' and was able to flex with the creative approach that was being taken by the partners in forming their EXTEND Centres and their associated visions. The data collection has been reported in the 3 Quality Reports. The last of these in February 2020 developed the

Project 586060-EPP-1-RO-EPPKA2-CBHE-JP – Reply to NEO Russia: Questionnaire on project implementation from June 3, 2020

thinking of the Quality Plan to ensure that a robust and evidence-based approach to the data collection in the final element of the project could be realised. This is crucial as the long-term contribution of the EXTEND Centres to the development of Engineering Educators in Russia and Tajikistan is the most important outcome of the project. To do this a clear blend of quantitative and qualitative criteria has been proposed that will be finalised over the coming months to coincide with the project’s emergence from the Covid-19 pause in the work of the Project Team.

1.2.1 Structure and composition of the teaching and learning packages for courses

During meeting in University of Minho in May 2019 it was decided to design eight courses addressing most topical teaching strategies in engineering education and 8 teams were composed with three PC universities and one EU supervising university in each team. During the Moscow meeting each team presented the course concept and received feedback from the EU partners who attended the event.

1st Update: content development of the new courses - current status: November 30, 2019 (Meeting Moscow)

Table 1 – Status of content development of the new courses

Module	Decisions made	PC university
Project Based Learning (PBL)	Elena Smirnova (BMSTU) made a short presentation based on peer assessment software, which will be a specific topic of the course. After that, Elena showed the state of the course description, which was considered quite developed. This course must be developed until the end of 2019. Some information is already available on the website.	TUT
E-learning and ICT Tools	Yurii Tsvetkov from BMSTU presented the structure of the course and draft student book that will be published in Russian. This course description and activities is already very well developed. There are already excellent plans for the development of specific activities and videos.	BMSTU
Foreign Languages for Engineering + Academic Writing	The course is ready with the full description, teaching and learning materials. The first piloting round is finished.	NMSTU

Research Based Learning	This course was presented by KSU and it is already very well developed. It is very much centred on teaching research and quantitative research methods. It seems that the course is too large for 1 ECTS and maybe it could be split in two courses. The UMinho team gave several improvement suggestions, mainly referring to different approaches related to the research-teaching nexus and ways of delivering it in a more active learning way.	KSU
Research Process Based Learning 2	This course was presented by BMSTU and seems also to be a great course. The description is well developed. The UMinho team gave several improvement suggestions, mainly referring to different approaches related to the research-teaching nexus and ways of delivering it in a more active learning way.	BMSTU
Active Learning Strategies	This course was not presented but the UMinho team did several meetings during the development and is almost ready for piloting.	MGSU
Curriculum Design and Development	Not present at the meeting, because the MRSU team was not able to attend. The course is almost ready for piloting. The consulting session will be organized on- line.	MRSU
Assessment	Improve the course content and the main comment was regarding the method on how courses will be delivered to participants, because content-wise they were good and relevant. This course is under the 2nd Feedback. TNU has to send the final version to UPB.	TNU
Communication	Improve the course content and the main comment was regarding the method on how courses will be delivered to participants, because content wise they were good and relevant. Course materials are not finished.	KuISU

In the Meeting at BMSTU in November 2019 in Moscow it was decided that the general information and description of the modules should be made in English and posted on the project website. Modules materials and lectures should be made in Russian or Tajik languages because most of the target audience of the modules in Russia and Tajikistan do not speak sufficient English (Detailed information can be found in the minutes, page 8, see Annex).

2nd update: March 10-13, 2020 (Meeting Warwick, Great Britain) Course development and piloting:

Table 2 – Warwick presentation (online and face-to-face) of development and piloting of new courses

Module	Decisions made/EU-Mentor	PC university
Project Based Learning (PBL)	The output was considered positive and a suggestion was made for the authors to send their recording and piloting observations. EU-Mentor: Riga Technical University (RTU)	TUT
E-learning and ICT Tools	The presenter implemented the given template and asserted that throughout the process they followed “EU-rules”. Some of the techniques/issues mentioned by the speaker in her answers to the above challenges included: lecture, hands on practice, video lectures, ppts, texts, student, generated videos etc. The output was considered positive. EU-Mentor: Warwick University (WU)	BMSTU
Foreign Languages for Engineering + Academic Writing	The speakers made an ample and well documented presentation of their product that up to the present ran into more than 200 pages. The output was considered positive. EU-Mentor: Riga Technical University (RTU)	NMSTU
Research Based Learning (RBL)	Workshop interaction. The presenters went through the material already submitted. Their mentors expressed appreciation for KSU’s progress so far. The output was considered positive. EU-Mentor: Warwick University (WU)	KSU
Research Process Based Learning (RBL) 2	This course was presented by BMSTU and the output was considered positive. EU-Mentor: Warwick University (WU)	BMSTU
Active Learning Strategies	The empirical basis of the presentation was a survey that compared teacher attitudes before taking up the Active Strategies modules and their changed attitudes at the end. The output was considered positive.	MGSU

	EU-Mentor: University of Minho (UM)	
Curriculum Design and Development	The presenters aroused unanimous interest in and appreciation of the results of their Piloting experience. The output was considered positive. EU-Mentor: University of Minho (UM)	MRSU
Assessment	The comments expressed concern over gender balance in the implementation of the EXTEND Centres, the integration of the issues covered by other courses in the Assessment course. Robin Clark offered to share info on the way Assessment is handled at the Warwick University. The output was considered positive. EU-Mentor: University Politehnica of Bucharest (UPB)	TNU
Communication	The KULSU piloting was preceded by two-way attempts at mock pilotings: first, KULSU acted as trainers and UPB acted as trainees then the other way round. The output was considered positive. EU-Mentor: University Politehnica of Bucharest (UPB)	KULSU

1.2.2 Overview: Course Development, EXTEND centres, Equipment status, Piloting Arrangements

The following table gives an overview to Course Development, EXTEND centres, Equipment status and Piloting Arrangements (status June 24, 2020).

Table 3 – Overview

Partner	Course Development	EXTEND Center Set-Up and Running	Equipment Status	Piloting Arrangements
BMSTU	Yes. 1. Project-Based Learning 2. Research-Based Learning 3. E-Learning	No. Opening postponed until October. The room and equipment were provided but the room modernization is not finished. It was stopped in March and probably we	Delivered, payment completed. University co-financed the purchase of the equipment with 500 thousand of Russian	Not finished. Piloting started in February 2020. 2 nd Piloting is planned to be finished in May 2021.

Project 586060-EPP-1-RO-EPPKA2-CBHE-JP – Reply to NEO Russia: Questionnaire on project implementation from June 3, 2020

		will finish it after the University lockdown ends.	Roubles.	
NMSTU	Yes. 1. Foreign Languages for Engineering + Academic Writing 2. Assessment	Centre is established in February 14, 2020. All documents are ready.	Delivered, installed, payment completed.	Not finished. Piloting started in October 2019. 2 nd Piloting is planned to be finished in November - December 2020
MGSU	Yes. Active Learning Strategies	Centre is established. The room, equipment, documents and staff are ready. Classes for MSc and PhD students are held in the Centre. VET courses are planned to start in Autumn 2020.	Delivered, installed, payment completed.	Not finished. The final version of the online course is not ready due to COVID-19. Piloting started in December 2019. 2 nd Piloting is planned to be finished in November 2020.
MRSU	Yes. Curriculum Design and Development	Yes. Centre is established in January 2020.	Delivered, installed, payment completed.	Not finished. Piloting started in February 2020. 2 nd Piloting is planned to be finished in April 2021.

TUT	Yes. Project Based Learning	Yes. Centre was opened in October 2019.	Delivered, installed, payment completed.	Not finished. Piloting started in February 2020.
TNU	Yes. 1. Foreign Languages for Engineering + Academic Writing 2. Assessment	Yes. Centre is established in November 22, 2019.	Delivered, installed, payment completed.	Not finished. Piloting started in December 2019. 2 nd Piloting is planned to be finished in December 2020.
KuSU	Yes. Communication	Yes. Centre is established in November 23, 2019.	Delivered, installed, payment completed.	Not finished. Piloting started in January 2020. 2 nd Piloting is planned to be finished in
KSU	Yes. Project-Based Learning	Yes. Centre is established.	Delivered, installed, payment completed.	Not finished. Piloting started in February 2020. 2 nd Piloting is planned to be finished in October 2020.

2. Opportunities to acquire skills in the methodology of developing courses

More training for Partner Country teams

After the field monitoring in September 2018 at MRSU in Russia we already included the recommendations for more mobilities and training in European Universities during the project meeting in October 2018 at KSU in Tajikistan in the schedule of the 2nd and 3rd project year. We included more participants from the partner countries in the project meetings and geared the meetings more closely to the needs of the partner countries. This happened in the project meetings in Riga (March 2019) and in Guimaraes (May 2019), in Moscow (November 2019) and at Warwick University in UK (March 2020).

In the field monitoring at MGSU Moscow in August 2019 there was also recommended more training for Partner Country teams to acquire skills in the methodology of developing courses, formulating learning outcomes etc.

Project 586060-EPP-1-RO-EPPKA2-CBHE-JP – Reply to NEO Russia: Questionnaire on project implementation from June 3, 2020

To realise these objectives, we used in this context two methodological instruments:

1. Individual Mentoring Groups

During the meeting in Bucharest in June 2018 we formed individual mentoring groups to share know-how and transfer best practices as an essential part of the daily work within EXTEND. In order to ensure that all partners are on track with their tasks, individual mentoring groups have been established within the project. The decision has been made for each European Partner to act as an individual mentor for two partner Universities from the Russian Federation and Tajikistan. The mentoring arrangements agreed upon among all EXTEND partners are as follows:

- **Politehnica University of Bucharest:** mentoring for Tajik National University (TNU) and Khulob State University (KulSU)
- **Riga Technical University:** mentoring for Technological University of Tajikistan (TUT) and Nosov Magnitogorsk State Technical University (NMSTU)
- **University of Minho:** mentoring for National Research Mordovia State University (MRSU) and Moscow State University of Civil Engineering (MGSU)
- **University of Warwick:** mentoring for Bauman Moscow State Technical University (BMSTU) and Khujand State University (KSU)

2. The Additional meeting in Moscow at Bauman University (27-30 November 2019) for course development, online-platform, Preparation of the piloting, role and function of Extend Centres, discussion about the preparation of business plans, Quality Assurance criteria etc. Detailed information can be found in the minutes (see Annex).

For the developing courses two strategies were considered, in order to provide opportunities to the RUS and TJK partners to acquire skills and competences:

1. Training Sessions: several training sessions were delivered in the context of WP2 - Establishment of Engineering Teaching and Learning Excellence Centres (EXTEND centres) in PCs. in the deliverable D 2.1A it is possible to consult the training material developed by the European partners while helping the Higher Education institutions of partner countries develop their staff. The main purpose was to prepare colleagues from Higher Education institutions of partner countries to involve themselves in the process and later on to create and develop the centres. The list of training materials from each training session can be consulted in the referred document (D 2.1B).

2. Mentoring: during the meeting in UPB (June 2018) a mentoring program was defined, in which the EU partners were responsible for monitoring, supporting and encouraging two other partners in several activities related to the project development. This strategy was particularly relevant in the development of the courses, in which the mentors and mentees had meetings during the process in order to discuss and provide feedback.

It is also important to highlight that the course preparation, in most of the cases, was developed in teams of three institutions, in order to enable them to cooperate and learn from each other. (see: <http://extend-erasmusplus.ru/node/10>)

One example how the cooperation in methodology can be developed is the cooperation between NMSTU in Russian Federation and TNU in Tajikistan. NMSTU is planning to send a teacher to TNU

in the academic year 2020/21 in order to share experience in the methodology of delivering the course “Foreign Languages for Engineering. Academic Writing”. The agreement with the Rector of TNU was reached. As soon as the online course is uploaded, NMSTU plans to hold a seminar with teachers and PhD students on how to enrol on the course and how the teachers can use face-to-face online courses for their classes.

3. Examples of courses/curricula/textbooks/manuals from EU

Approaches to teaching and creating infrastructure for the learning environment in Engineering were provided to the PC universities by the EU partners in the seminars and summarized in the Deliverable D 1.2 – Report on the Study of Best European Practices in teaching disciplines and teacher competence enhancement further enriched in seminars and joint project activities. A total of 35 EU Best Practices were collected, analysed and presented in Deliverable 1.2. Two main categories of Best Practices were considered: 1. Teaching methods (used in the training of engineers, such as active learning); 2. Organizational approaches (for teacher professional development).

RTU supplied NMSTU with audio materials for the course “Foreign Languages for Engineering. Academic Writing”. It is also planned to get audio materials from Warwick university.

UMinho has presented to their mentees at MRSU the books on engineering pedagogy they use. The template of the course was provided by RTU.

UPB as Mentor of TNU (Tajik National University) and KulSU has provided their mentees with appropriate MOOC addresses for the topics in their modules, guidelines for specific areas addressed (ICT tools), as well as a scanned List of Contents, references and Follow-up course Questions from one of the academic resources in use at the UPB on relevant module topics (Communication, in Romanian).

4. List of teacher competences

A List of Teacher Competences was developed jointly by the Consortium in three phases. During the first phase each university offered the list and description of competences based on literature and legal documents review, personal teaching experience and research practice. Initially 65 competences were collected. During the second phase, BMSTU summarized competences and during the KSU meeting there was made a brief presentation and there was organized an evaluation of the preliminary list of competences. The Consortium chose the normative approach for the competences when we use competence as a goal - the idea of the excellent teacher. After the evaluation undertaken during the third phase, the final framework of teacher competences was developed which includes a total of 28 competences, identified and organized in five categories, namely: Professional Teaching Competences (PTC); Management Competences (MC); Research Competences (RC); Communication Teaching Competences (CTC); Personal Teaching Competences (PSTC).

The framework is presented in detail in Deliverable 1.4 - Competences descriptor of university teachers of engineering disciplines. The competences for the course development have been chosen from this list. The descriptor may have a prediction value considering that in the future EXTEND centres can offer one module for each competence and tailor made courses according to certain teacher group needs.

5. Role/functions/activities of the EXTEND Centres

There are 8 EXTEND Centres established. 7 are officially launched, while BMSTU is in the preparatory stage. The Room modernization is not finished, because it was stopped in March 2020 and will finish after the University lockdown ends.

The EXTEND Centres were created in order to unite efforts and resources of EXTEND Centre network for researches, development and introduction of modern methods and approaches in the field of engineering and pedagogic innovations according to the priority directions of world science

5.1 Equipment for the EXTEND Centres

All the equipment has been purchased since last year according to the requirements and technical specifications and delivered to the EXTEND PC universities.

5.2 Role and function of the EXTEND Centres

Role and functions of the EXTEND Centres are outlined in the Sustainability Plan and include the following points:

By the end of the project, each partner country university will host EXTEND Centres which will offer the following services for the home university:

- training for the teachers and PhD students in the field of modern teaching and learning tools, pedagogical methodology, research-based and project-based learning, assessment techniques, English for special purposes and other related fields;
- development of training programs in the field of modern teaching and learning tools, pedagogical methodology, research-based and project-based learning, assessment techniques, English for special purposes and other related fields;
- assessment of the tools and approaches employed by teachers, student and teacher's level of satisfaction with the quality of education results, process, environment and administration;
- research in the field of modern education technologies for engineering education;
- organization of networking and discussion activities like conferences and round-tables in the field of new technologies, learning and teaching tools for engineering education;
- organization of project-based learning activities in partnership with industry and service sector;
- support of the EXTEND project website;
- teacher and PhD students consultations and support in the implementation of new technologies, learning and teaching tools for the engineering education;
- organization of shared use of facilities for the inter- and intra-institutional (offering equipment for rent) use;
- organization of academic exchange between and beyond EXTEND Centres including exchange of teachers, trainers and students;
- added value services like certification of teachers, preparation and review of publications, etc.

5.3 Business plans

In the Warwick Meeting (March 2020) it was decided to send to the website team - until the End of May 2020 - all the official documents about the establishment of EXTEND Centres for posting on the EXTEND website (including the Rector's decree and an EXTEND Center Statement, the Project 586060-EPP-1-RO-EPPKA2-CBHE-JP – Reply to NEO Russia: Questionnaire on project implementation from June 3, 2020

name and photo of the Director, address and contacts). The Information will be uploaded by the end of July 2020.

In the project we started with the business plan (Business Canvas) during the Bucharest meeting in June 2018. Business Plans will be created for each EXTEND Centre by the end of the project according to the results achieved in the project.

5.4 Activities of the EXTEND Centres

BMSTU: The EXTEND CENTRE was planned as a separate unit in the university structure (under the Department of Academic Affairs and Vice-Rector for Academic affairs). Its main goal is to produce, promote and support e-learning courses at the university including MOOCs, SPOCs and e-learning environment courses. It will offer training in e-learning design and support for BMSTU and partner universities teachers, offer a technical base and support for e-learning courses design, offer consultation support and produce necessary local documents for e-learning. It will partner with the University Centre for Teacher Training.

MRSU: Key activities of MRSU EXTEND Centre are focused on offering and implementing courses targeted at PhD students and teachers in Engineering (to enhance teaching tools including Active Learning Strategies – PBL, TBL, etc., strengthen a student-centered approach, etc.) including opportunities of collaboration with other Universities within a Network of EXTEND Centres. Activities of MRSU EXTEND Centre will be carried out according to the Sustainability Plan. High standards of instruction delivered through the use of new teaching tools and methods will attract more students to engineering programs, as well as foster internationalising education in the Partner Countries. These indicators of sustainability will benefit all partner and EU countries education systems in the short-term and long-term perspectives.

MGSU: The EXTEND CENTRE at MGSU is a separate unit in the university structure (under the department of Social, Psychological, and Legal Communications). The classes for MSc and PhD students have been held there. The annual retraining of the teaching staff is planned to be held in Autumn 2020.

NMSTU: The EXTEND centre at NMSTU held a skype conference “The Use of Modern Distance Learning Technologies in the Work of EXTEND-Centres of the EXTEND Project” (May, 15, 2020). In particular, a long-term work plan of the MSTU EXTEND Center for the year was drawn up, the key areas of its work were identified, three advanced training programs for scientific and pedagogical workers of NMSTU, as well as school teachers and secondary vocational education workers were developed.

Activities are planned as follows:

to prepare a Collaboration Agreement between EXTEND centres;

- application of modern pedagogic approaches for **the** development and building up of foreign language professional competence, ICT competence, etc.;
- enhancement of the process of forming and development of skills and experience of teachers and learners’ work in the sphere of pedagogic innovations based on the best European experience;
- involvement of the universities teaching staff and other stakeholders in the programs of further training, professional retraining, participation in scientific and practical

conferences, seminars, debates, round tables, workshops, etc;

- promoting cooperation with national and foreign HEIs and scientific organizations;
- carrying out scientific and methodical researches;
- organization, holding and participation in conferences, meetings, symposia, seminars, master classes and other scientific and educational events.

TNU:

- Pre-piloting meeting during EXTEND Center Opening ceremony, 22nd November 2019
- Presentation of the TNU EXTEND Center and Assessment of Piloting Programme, 22nd December 2019
- Piloting 1 was held in the EXTEND center, January and February 2020
- Presentation and dissemination of the EXTEND Center made by center staff dedicated to the women day “Women and girls in science”, 11th February 2020
- Participation in the 1st online international scientific-practical conference “Using modern distance educational technologies in the work of EXTEND Centres” on the basis of NMSTU, 15th May 2020.

KSU:

- Presentation of the KSU EXTEND Center
- Piloting 1 was held in the EXTEND center

KuISU:

EXTEND Centre in KuISU was established and equipped by the funds of EXTEND project financed under EU project ERASMUS+ on November 23, 2019.

From the same beginning of the centre there were provided the following activities:

- Piloting of the Communication course developed around EXTEND project for 20 PhDs and teachers of KuISU (February, 2020);
- Presentation of prepared materials for London meeting (online, March, 2020);
- Seminar + Master class for teachers, PhDs, Master and BA students of IT specialty on Modeling, use of the new 3D equipment, and printing of the results;
- Round tables and seminars and project management meetings on project implementation (November, 2019 – May, 2020);
- Online boarding meetings with the Russian, Tajik and EU partners around the project (November, 2019 – May, 2020);

Additionally, there were provided:

- Trainings for the future trainers/girls (December, 2019);
- Seminars + Master classes for graduating girls/students on employment skills (January – February, 2020);
- Mentoring on employment skills for the graduating students/girls in KuISU (March – April, 2020);
- Seminars on Leadership for the active population/Leaders of Kulob Region (April, 2020);
- Debates on Democracy for the students (February-April, 2020);
- Public Speaking in English for students (April, 2020);
- Master classes on tourism and its organization for students of tourism specialty of KuISU (December, 2019- April, 2020);

- Political Clubs for students (December 2019-May,2020);
- Management meeting of KulsU staff (December 2019-May, 2020)

TUT:

October 2019

- TUT EXTEND Center opening ceremony held in October, 2019 after full delivery of all the equipment with the participation of the university administration.
- Abdurahmon Habibov was appointed as the Head of the TUT EXTEND Center.
- All the purchased equipment delivered and installed at the TUT EXTEND Center, which are accessible for the use of teachers and students of the university.

November 2019

- With the purpose of the dissemination of the EXTEND project aims and objectives there was organized an introductory seminar, where there participated both the administrative and academic staff of the faculties.
- There was held a working meeting of the EXTEND Project Team with the staff of the departments and faculties to discuss and identify the content of the Project Based Learning (PBL) course.

December 2019

- Drawn the schedule of the first piloting of the PBL course and agreed with the Academic Department of TUT in order to organize the first piloting of the PBL. course
- Meeting of the Head of the EXTEND Center with the management of the Academic Department with regard to the organization of the PBL course in order to further include this course in the curriculum.
- Printing of the dissemination materials and their distribution amongst TUT and other HEI students.

January 2020

- Holding meetings by Head of EXTEND Center with the PhD and Master students to attract them to PBL course.
- Development of the Project Based Learning (PBL) course.

February 2020

- Conducting the first face-to-face PBL course for the 15 PhD and Master students of the engineering specialties.
- Developed and conducted questionnaires amongst PBL course students in order to identify the course quality and its connection to their activities.
- PBL course Certificates Award Ceremony held with the participation of the Vice-Rector on Innovation and Education Technologies, Dr. Mirzo Yusupov.

March 2020

- Preparation of the electronic education materials and uploading them to the university electronic platform for the purpose of the organizing the second piloting in October 2020.

October 2020

- Organization of the second piloting for 15 Master and PhD students offered online.

6. Website, Dissemination, Role of the e-platform

6.1. Website, Role of the e-platform

When created, the Project On-line platform <http://bmstu.online> was initially planned to deliver MOOCs. But in the wake of the decision made at the Project meeting in Moscow in November 2020 regarding the need of increased sustainability of project results, the project website will not have to function as an e-platform, due to the arising legal issues of its shared ownership and use. **Each PC university will produce project MOOC and place it on the relevant PC university MOOC-platform or Learning Management System i.e. Moodle. The EXTEND project website will provide the link to the MOOC-platforms and information about access for teachers and trainees (see <http://extend-erasmusplus.ru/node/10>).**

The new project website was created from scratch, after the decision of the consortium during the project meeting at Warwick University in March 2020 and it has been made available at the URL <http://extend-erasmusplus.ru/>. A decision was also made to set up a Website and Platform Support Group made up of the following members: Elisabeth Lazarou (UBP), Stefan Shvedov (MGSU) and Timo-Junani Turunen (RTU). The website has the following structure: About the project, Phases, Partners, Centres, Courses, News, Results, Opportunities, Photo, Contacts. The necessary resources and the budget required for that is provided by BMSTU.

6.2 Dissemination of the project

In addition to the deliverables provided for in the project, contributions to conferences were submitted in the **first project year**, mostly indexed in Scopus, ISI or published in Springer. For example, two papers about the EXTEND project were presented at 12th International Technology, Education and Development Conference (Dates: 5-7 March, 2018) in Valencia, Spain. An important issue during the first project year was dissemination on local and regional level with publications in the PC universities press and regional newspapers. It was the period of creating awareness about the project among stakeholder groups.

In the **second project year**, both project conferences took place in June 2019. The conference at the NMSTU (RF) in June 3-4 and the conference at the TNU and TUT (TJ) in June 25-26. In the second year, an EXTEND Workshop was held as part of the 15th International Scientific Conference “eLearning and Software for Education”, in Bucharest, April 11-12, 2019. More than 15 papers were published that are indexed by ISI.

Furthermore, partners of the project consortium also submitted other papers, e.g. in Third Conference, CIT&DS 2019: Creativity in Intelligent Technologies and Data Science in Volgograd, RF. 2 papers are published in Springer Nature Switzerland; <http://www.springer.com/series/7899>, ISSN: 1865-0929; E-ISSN: 1865-0937.

In the **third year of the project**, a large number of papers were also presented and published in various international conferences, all of which are indexed by Scopus, ISI etc. or in other international databases, i.e.

- ✓ in 9th Balkan Region Conference on Engineering and Business Education and 12th International Conference on Engineering and Business Education, October 2019;
- ✓ Participation at ITEE conference and BMSTU, 29th November 2019 (detailed information see minutes in Annex).

Project 586060-EPP-1-RO-EPPKA2-CBHE-JP – Reply to NEO Russia: Questionnaire on project implementation from June 3, 2020

- ✓ EXTEND Workshop at 16th International Scientific Conference “eLearning and Software for Education” in Bucharest, 1-2 May 2019 with more than 25 papers!
- ✓ EDUCON 2020: IEEE Global Engineering Education Conference in Porto, April 2019 with one paper
- ✓ Dissemination Skype-Conference organized by NMSTU for Russian and Tajik partners and Stakeholders, May 15th 2020
- ✓ at 48TH SEFI ANNUAL CONFERENCE, 20-24 SEPTEMBER 2020 in Enschede, NL, a paper from Warwick University team that focuses on the Quality Assurance work for EXTEND is accepted.

At the moment, there are already **more than 70 publications** related to the EXTEND project. All the dissemination activities will be uploaded in July on the new project website.

To improve visibility of the EXTEND project a project site in ResearchGate

(https://www.researchgate.net/publication/337707312_EXTEND_Project_Systematic_Approach_to_Curricula_Development) and on Facebook <https://web.facebook.com/pg/KA2EXTEND/posts/> have been created, but also a project flyer, a YouTube video etc.

6.3 Sustainability plan

According to the application, the Sustainability plan was scheduled for Year three. During the Moscow Meeting (27-30 November 2019) the draft version of a Sustainability Plan (see annex) was discussed and completed in March 2020.

6.4 Coursebook Publication

In the Warwick meeting (March 2020) the consortium decided that the Coursebooks might turn out by putting together all the modules. The volume is bound to include such rubrics like *rationale, contents, outcomes, materials, tasks, distance learning elements, assessment criteria, teacher notes*, etc. It was also pointed out during the discussion that

- some form of standardization needs to be taken into consideration at some point (including course descriptions) to make the Coursebook “as consistent as possible”;
- the Coursebook work should start only after the piloting results have been collected and analyzed;
- each university should appoint one member to be part of the editorial board by the end of March.

Due to the COVID19 pandemic, piloting could not be continued and will only be completed in winter / spring 2021. This inevitably has an impact on the production of the course books, which must also be postponed to April / May 2021.

7. Participatory Project Management

The monitoring visit in Russia indicated that project management and communication were not based on a participatory approach and that opinions of different project teams were not always considered.

The Coordinator (UPB) also put this point up for discussion at the zoom Management Board Meeting in September 2019 and asked all partners to fill out a shared template with the kind of changes they would like in this context. No suggestions for improvement were made. The partners find that project management and communication were based on a participatory approach and that opinions of different project teams were always considered. We had in the first project year some issues, but these have been solved.

The agenda of the face-to-face and online meetings is negotiated with the participants to raise all the questions partners have. The content of the meetings and activities correspond to the needs of the partner universities. To enhance the project management, regular zoom meetings, WhatsApp group and business correspondence were organized. The Project-team discusses current and strategic issues of the project implementation.

8. Conclusions

8.1 How the remarks from previous monitoring have been addressed? Any problems?

Monitoring observations were taken into account to adjust the goals and objectives of the entire project team (see Top 1 to 7).

- The issues regarding the online-platform and website have been solved.
- The Website has been redeveloped. It follows the visibility rules of the Grant Agreement. Website contains information on project goals, activities, participants, centres and results. However, as it was started March 2020, we have faced obstacles with further updating.
- The developed courses will be located on every separate university website / platform and the link will be on the Extend website.
- Instead of sending an invitation to an external expert, as recommended in the last monitoring at MGSU in August 2019, the Consortium decided to offer more intensive mentoring from the EU partners, training sessions provided by meeting in November at BMSTU and at Warwick University (March 2020). It was planned to give further training at the next meeting in Kulob, Tajikistan and to invite an external expert in this connection.

8.2 What have been achieved?

- ✓ A new site has been created URL <http://extend-erasmusplus.ru/>
- ✓ Online courses are being developed <http://extend-erasmusplus.ru/node/10>
- ✓ Course Piloting 1 has been completed (see Annex)
- ✓ Course Piloting schedule has been updated (see Annex)
- ✓ Sustainability plan has been completed (see Annex)
- ✓ Equipment for EXTEND Centres has been purchased and installed (see Top 5.1)
- ✓ 7 of the 8 EXTEND Centres have been established (see Top 5) and <http://extend-erasmusplus.ru/node/4>)
- ✓ Training for PCs and Conference at BMSTU in November 2019 (see Annex: minutes of

- BMSTU meeting)
- ✓ Quality Assurance, Sustainability of project results, Evaluation of Piloting 1 in March 2020 (see annex: minutes of Warwick meeting) (see Annex)
 - ✓ Dissemination conferences have been held: April 2019 (at UPB, RO: Workshop EXTEND at ELSE-Conference); June 2019 (at NMSTU, RF and NTU/TUT, TJ); November 2019 (ITEE conference at BMSTU, RF), Mai 2020 (at UPB, RO: Workshop EXTEND at ELSE-Conference; Skype-Conference organized by NMSTU for Russian and Tajik partners) etc. (see <http://extend-erasmusplus.ru/node/9>)
 - ✓ To improve academic visibility of the EXTEND project, a specific page was created on Researchgate.net (<https://www.researchgate.net/project/EXTEND-Excellence-in-Engineering-Education-through-Teacher-Training-and-New-Pedagogic-Approaches-in-Russia-and-Tajikistan>) where some of the best project papers are downloaded free of charge.

8.3 Deviations in the project plan

Deviations in the plan have been due to the COVID-19 pandemic situation. This entailed: finalizing course piloting (part 2, the holding of the Summer School for PhD students in July 2020 at Warwick, the finalizing of the coursebooks, the project meeting in Kulob (TJ) in June 2020 and the Final Conference at BMSTU. The postponed dates are as follows:

- course piloting 2: October 2020 – May 2021
- Finalization of coursebooks: May/June 2021
- Project meeting in Kulob, Tajikistan: April/Mai 2021
- Summer School at Warwick University: July 2021
- Final conference at BMSTU: September 2021

The project consortium has decided to apply to EACEA for a project extension by one year. The necessary documents are being prepared.

8.4. Relevance of the inputs for the project progress

The project partners in the PC universities (RF and TJ) have confirmed that all inputs were relevant.

9. Annexes

- D 1.4: Competences descriptor of university teachers of Engineering disciplines
- D 4.1: Quality plan
 - report 1 – Internal monitoring and quality control
 - report 2 – Internal monitoring and quality control. First year of the project
 - report 3 – Internal monitoring and quality control. Second year of the project
- D 5.3: Dissemination plan: Report on Dissemination, Exploitation and Sustainability
- D 5.4: Sustainability plan
- Update: Piloting plan of the 1st and 2nd Piloting
- Minutes of project meeting at BMSTU, Russian Federation, 27-30 November 2019
- Minutes of project meeting at Warwick University, UK, 10 -13 March 2020
- Minutes of Online Management Board Meetings (Sept. 2019 – June 2020)