Erasmus+ Strategic Partnerships for vocational education and training

PROJECT NO: 2017-1-TR01-KA202-045941

Virtual and Augmented Reality (V&AR) in Design for Manufacture
- Project Start Date: 01.10.2017
- Project End Date: 30.09.2019
- Total Budget: 154.631,00 Avro
Background of project;

- The rate of discarded products resulting from employee errors can sometimes reach to a level that may pose a threat to companies because of the technical drawing issues.
Why aren’t we successful teaching technical drawings to students?
The primary reasons not to achieve success in teaching Technical Drawings:

- student’s lack of the adequate level of basic competence
- motivation,
- concentration,
- attention, confidence and background knowledge
• Besides above, not effective delivery of teaching methods
The aim of this project is to develop a curriculum, implementation program and materials covering:

- technical drawing,
- geometrical tolerances,
- assembly under "design for manufacture" subjects targeting mechanical engineering
- By using VR-AR technologies.
Expected Project results: the use of V&AR (virtual and augmented reality) applications in technical education:

- will increase the level of comprehension and persistent knowledge of the learners,
- indirectly shortening the training period
- decreasing the education and training cost
## J.1. Summary of participating organisations

<table>
<thead>
<tr>
<th>PIC of Organisation</th>
<th>Name of the Organisation</th>
<th>Country of the Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>997723959</td>
<td>ULUDAG UNIVERSITESI</td>
<td>Turkey</td>
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<tr>
<td>999452208</td>
<td>THE UNIVERSITY OF HUDDERSFIELD</td>
<td>United Kingdom</td>
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<td>913114642</td>
<td>Bizpark Bilisim San.Tic.Ltd.Sti.</td>
<td>Turkey</td>
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<tr>
<td>999868532</td>
<td>TECHNICAL UNIVERSITY OF SOFIA</td>
<td>Bulgaria</td>
</tr>
</tbody>
</table>

Total number of participating organisations: 4
Work package 1: Background analysis and course curriculum development (Oct. 2017 - Sep 2018)

- Creating profiles of the learners needs
- Creating useful practical knowledge of target learners
- Identification of local networks and stakeholders
- Developing the basic design of course curriculum
- Development of training methods
- Definition of priorities subjects used in Virtual and Augmented Reality (V&AR) technologies
Work package 1 Outputs:

- Learners' profile + needs analysis report.
- First draft of the training path (methodology + process + tools)
- Course Curriculum
Work package 2: Material Development (April 2018 - April 2019)

- In this work package, VR / AR technologies and training material will be developed by partners for the topics identified as priority areas in needs analysis
- Development of mobile / Hololens applications
- Development of VR applications
- Development of AR applications
- The content of "Design for Manufacture" will be developed according to the VR & AR technology determined by the partners in the kick of meeting.
Work package 2 Outputs:

- Mobile/Hololens applications
- VR software/applications
- AR software applications

- Training of first trainees group
- Training of targeted students
- Evaluate of training groups in terms of trainees.
- Focus on learners’ evaluations and input
- Re-design of curriculum/ materials
This first draft of training path (methodology + process + tools) will be tested in pilot training with the direct target group. The training path will be revised and re-designed according to the evaluation results.

Work package 3 Outputs:

- trainer's reflections
- learner's reflections
- evaluation report of the pilot training
- re-design of the training path according to the feedback received.
Work Package 4: Dissemination and sustainable implementation of the products (Feb. 2019 – Oct 2019)

UU will lead the communication aspects of the project thus designing an appropriate website and dissemination material
Work Package 4 Outputs:

- Dissemination plan and reports
- Sustainability plan and report
- Dissemination material, Website
- Quality report
- Meeting and interim evaluations
- Beneficiary Evaluation
- Final evaluation
- Closing seminar
Kick of meeting: (15 January 2018- Turkey)

The content of meeting is;

• Progress of the project for initial planning and decision making;

• Setting first tasks and project activities;

• Discussion of development of curriculum and the priority of training methodologies and digital materials.
Second meeting: 18 April 2018 - UK

- The content of meeting is;
- For the discussion and finalization of the learners profile and needs analysis report;
- Collection of mobile learning technologies to apply during the training path,
Third meeting: (18 October 2018-Bulgaria)

The content of meeting is;

- for the revision of the training path based on the testing procedures;
- Development of curriculum and the priority of training methodologies and digital materials
Forth meeting: (19 April 2019-UK)
The content of meeting is;
• Discussing and reviewing materials for pilot training events
• Development of training Materials
• Evaluation and transferability guide, final guide book, digital materials and reports
Training (19 April 2019- UK)

- Training of the trainers
- All project partners will attend
- How to use V&AR tools to teach in DfM and Technical Drawing courses.
- Testing of the developed V & AR training material
- The implementation and dissemination of the project results will be carried out by the trainers who will participate in this training program
Final / closing project meeting and closing seminar: (19 October 2019-Turkey)

The content of meeting is;

• Finalizing outputs and sustainability actions of the project products

• Evaluation and transferability guide, final guide book, digital materials and reports
THANKS!