

EDU-VET

**Research and Development Conference
17th- 19th of November 2020**

Project Number: 2019-1-DE02-KA202-006068

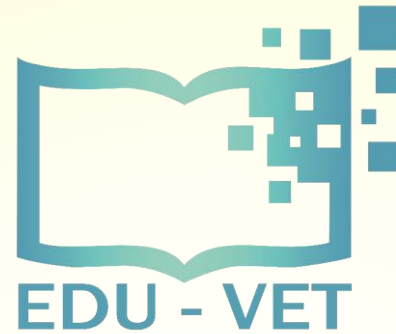


EDU-VET

E-Learning, Digitisation and Units for Learning at VET schools –
Creating online Learning Environments in Technical Education for
European metal industry

IO1: Summary Pedagogic Research Report

-1-



EDU-VET

IO1: Summary Research Report

EDU-VET – Research and Development Conference

Online Project Meeting 17th to 19th of November 2020

Project Number: 2019-1-DE02-KA202-006068



Current status of IO1

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IO1: Summary Research Report

- Leading Organisation: UPB
- Duration: 01/09/2019 to 01/09/2020

Part 1: Desktop Research

Part 2: Field-Based Research

- Interviews (4 partners)
- Questionnaire (100 participants per partner; Online Survey)

Summary Pedagogic Research Report

- Translations into national languages
- Creation of flipbook



Current status of IO1

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Part 1: Desktop Research: Done ✓

- Research Report (per partner) ✓

Part 2: Field-based Research: In progress

- Interviews (4 partners)

- UPB, BKBW, CIFP: Done
- LMC, SBEOG (have to send the answer sheets to UPB latest until 30/11/2020)

- Questionnaire (100 participants per partner; Online Survey)

- UPB and CIFP: Done
- LMC, SBEOG, BKBW: In Progress (latest until 30/11/2020)

Writing Summary Pedagogic Research Report (UPB): In progress

- Compiling data of the partners (UPB) (latest until 31/12/2020)
- Results of the specific research conducted by IK (latest until middle of Nov 2020)



Current status of IO1

Writing Summary Pedagogic Research Report: In progress

- Correction of English Research Report (LMC) (latest until 15/01/2021)
- Translation in national language (UPB, BKBW, SBEOG, CIFP) (latest until 31/01/2021)
- Creation of flipbook on the basis of the translations of the research report and integration on the website (IK) (latest until 31/01/2021)



Summary Research Report

- Structure

- 1 Executive Summary
- 2 Introduction
- 3 Part A: Results of the literature review in partner countries
 - 3.1 Existing experiences with new media, e-Learning and blended learning
 - 3.2 Key skill areas of a VET curriculum in the metal sector
- 4 Part B: Results of the questionnaires and interviews applied in partner countries
 - 4.1 Key results of the interviews
 - 4.2 Key results of the questionnaires
- 5 Part C: Results of the specific research conducted by IK
- 6 Insights into modules for the EDU VET training measures
- 7 Insights into Learning Outcome Matrices
- 8 Conclusions and Recommendations

Summary Research Report

- First insights

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3 Part A: Results of the literature review in partner countries

3.1 Existing experiences with new media, e-Learning and blended learning

UPB: Many years of experiences with new media, e-Learning and blended learning scenarios (e. g. Erasmus+ projects MATH, YES, Learning Map, SMART etc.)

IK: Combining technical expertise with pedagogic expertise; developments in creating a new generation of serious games in vocational education, creating authentic learning situations that can be used individually or in blended learning scenarios (e.g. The Fair project, The Copy Job)

BKBW: Practical experience in fostering and motivating students through the use of new teaching / learning methods (e.g. IT tools such as Moodle and Lonet); first practical experience with game-based forms of instruction through the use of experience Trainings from Erasmus + projects in the previous year; digital infrastructure at school (e.g. Active boards, multifunctional screens etc.)

LMC: Face to Face classroom is core method, but blended learning approach will be more and more present; Tutors can use video aids to assist with demonstrations and when assessing the learner's abilities, tablets and mobile phones can be used to capture both photographic and video footage and record professional discussions

CIFP: Wide academic offering with different options available for students: conventional, adults, blended learning and dual-system; some teachers have implanted "virtual classrooms" using a Moodle platform; high range of virtual classroom subjects (e.g. "Grafical interpretation", "Manufacturing processes implementation" or "Production scheduling" etc.)

SBEOG: Experiences with new media; e-touch screens in the classrooms of all training courses; using of office 365 applications (e.g. Teams etc.); blended-learning approach is in initial phase

Summary Research Report

- First insights

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3 Part A: Results of the literature review in partner countries

3.1 Existing experiences with new media, e-Learning and blended learning

Most appropriate technology platforms to be developed as e-learning environments

► **Germany**

- Moodle is preferred
- Integration of H5P application and tasks

► **United Kingdom**

- Using the applications of Microsoft Office 365
- Platforms such as Kahoot are used to create fun online quizzes
- Teachers also uses a platform called ebs on-track

► **Spain**

- PLATEGA platform were classified as blended learning and not online (based on the Moodle tool)

► **Netherlands**

- Microsoft Office programmes
- Learning platform It's Learning



Summary Research Report

- First insights

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3.2 Key skill areas of a VET curriculum in the metal sector

Key skill areas that need to be addressed in the EDU-VET proposed curriculum in the metal sector

- Digital competences, methodological and learning competences
- Technical competences (Professional competences)
- Action competences
- Personal competences and social competences
- Regarding lifelong learning: flexibility, reflection and mobility
- Professional and subject-related skills need to be intensified in the VET metal sector
 - Basic metalworking (Drilling, tapping, filing, drawing, drawing reading and knowledge of materials)
 - Basic construction (Bending, lace, welding, welding symbols, types of welding, welding stresses and the way of welding)
 - Basic sheet metal (sides)
 - Basic machining (conventional turning and milling and setting)
 - Basic electrical engineering (Reading simple diagrams, making wiring, lamps, recorders, sensors, name parts)
 - Basic mounting techniques (bolt screw joints, bearings, gears, chain wheels)
 - Knowledge of materials and material properties, occupational health and safety

Summary Research Report

- First insights

3.2 Key skill areas of a VET curriculum in the metal sector

Key skill levels that are appropriate to local target groups

- Level 1 (Introductory level)
- Level 2 (Intermediate level)
- Level 3 (Advanced level)

In *Germany*, training in the metal industry takes place in a dual system, so that the quality of training in terms of technical skills is very well developed at all three competence levels. There is an increased need for fostering digital competences in schools and companies

Concerning the *United Kingdom*, it is necessary to improve the education system with innovative knowledge and ways of learning and teaching to face the pitfalls of digitisation.

In *Spain*, most VET schools and companies are in line with the most demanded professional profiles within the Spanish labour market through the intermediate and upper level diplomas hosted in their academic offering (technician in Machining and higher technician in Mechanical Production Scheduling), with the exception of the approach more focused on mechanical design.

In *the Netherlands*, the digitisation process at schools and companies is at an appropriate level and is constantly evolving. In fact, the range of existing e-learning materials is very large. Thus, it is necessary to develop structured online learning material.

Summary Research Report

- First insights

3.2 Key skill areas of a VET curriculum in the metal sector

Most appropriate media formats for learning content for target groups

- Moodle platform
- Combination of face-to-face and online learning methods (blended-learning approach)
- Online environments provide easy access and distribution of the learning resources
 - audio-video files and video clips
 - online platforms, slide-shows (PPTs)
 - digital tools
 - Webinars
 - MOOCs
 - interactive tasks (H5P)
 - online showroom with best-practices

Summary Research Report

- First insights

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3.2 Key skill areas of a VET curriculum in the metal sector

Type of assessment framework that would be most appropriate to facilitate the measurement of attainments

- The assessment should be built around several crucial elements: overall aim, learning outcomes, delivery methods and assessment methods.
- Competence level:
 - Level 1: Introductory level (refers to 12-14 years)
 - Level 2: Intermediate level (refers to 14-16 years)
 - Level 3: Advanced level (refers to 16-18 years)
- Methods:
 - Blended-Learning approach:
 - Classroom scenario
 - Online scenario
- Tools:
 - Classroom scenario: tests, case studies, discussions, creating posters and flipcharts, group work, exercises/worksheets, assessment using technology based simulators in workshops, workbook, best-practices, self-directed learning, life demonstration
 - Online Scenario: H5P tasks, surveys, quizzes, questionnaires, peer evaluation, group work via break-out sessions, online discussion forum, EDU-VET Online Observatory, online video, slide-show (PPTs), creation of explanation videos, online case studies

Summary Research Report

- First insights

4 Part B: Results of the questionnaires and interviews applied in partner countries

4.1 Key results of the interviews

	Position/ Experience (in years)	Importance of basic topics	Material and available resources	Pedagogic support required	Media formats	Pros/Cons of online teaching	Teacher/trainer skills for online courses
	<ul style="list-style-type: none"> - Trainers in an industrial company for the professions of process and industrial mechanics - Training manager for commercial and technical apprenticeships - Teachers in the internship for the subjects mechanical engineering and manufacturing technology 	<ul style="list-style-type: none"> - Drilling: Basic - Turning: Basic - Milling: Basic 	<ul style="list-style-type: none"> -Using of e-learning to consolidate the content of VET school and the specific lessons at company -Some learning videos - H5P content -A lot of learning material that cannot yet be used for the EDU-VET project from which you can generate documents for the project 	<ul style="list-style-type: none"> -Discussion of tasks with other trainers and teachers -Creating tasks in a team → receive comprehensive feedback and constructive comments which can be integrated into the task development -Promote media literacy of the teacher 	<ul style="list-style-type: none"> -Internal e-learning platform -Moodle -PC -Smart-phones or document cameras -Active boards -Video/ audio files -Smartboards 	<ul style="list-style-type: none"> + Students can learn from home + wide range of additional exercises +Flexibility +different ways to communicate: Chat, Videos, etc. -expandable digital skills -no end devices are available -intensive support from teacher/ trainer -There is a need for more adapted contents (more interactive...) 	<ul style="list-style-type: none"> -Experience with e-learning -Open-minded concerning new media formats -Feeling of confidence in using new media -Certificates



Summary Research Report

- First insights

4 Part B: Results of the questionnaires and interviews applied in partner countries

4.1 Key results of the interviews

Chances of e-Learning/ Blended-Learning:

- Independence in using (place and time)
- More flexibility
- Students can access the course anytime and anywhere
- Wide range of additional tasks
- Attractive presentation of materials
- Decoupling of communication processes (for teacher, pupils, parents and trainers etc.)
- Different ways to communicate: Chat, Videos, etc.



Summary Research Report

- First insights

4 Part B: Results of the questionnaires and interviews applied in partner countries

4.1 Key results of the interviews

Challenges of e-Learning/ Blended-Learning:

- Lack of IT skills
- Learners often have no terminal equipment
- Students need to get practice with real machines, which goes far beyond any simulator available
- Language difficulties can be overcome
- Students are distracted from the internet and can no longer concentrate on their work
- Technology led too strongly
- No action-oriented lessons possible
- Very demanding for students regarding:
 - mental abstraction
 - organization
 - persistence
 - determination

Summary Research Report

- First insights

4.2 Key results of the questionnaires

In progress

5 Part C: Results of the specific research conducted by IK

In progress

6 Insights into modules for the EDU VET training measures

Further insights will follow in the following presentations

7 Insights into Learning Outcome Matrices

Further insights will follow in the following presentations



Do you have any questions?

Contact

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