



EDU-VET

IO6 – Policy Paper

Prepared by Lancaster & Morecambe College (LMC)

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

Acronym: EDU-VET

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Project partners:

P1	University Paderborn (UPB), DE
P2	Ingenious Knowledge GmbH (IK), DE
P3	Berufskolleg Bocholt-West (BKBW), DE
P4	Lancaster and Morecambe College (LMC), UK
P5	Centro Integrado de Formación Profesional Someso (CIFP), ES
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Contents:

Project Summary.....	3
Focus Groups & Feedback.....	5
Recommendations.....	11
Conclusion.....	13

1 Project Summary

Project Aims:

The overall aim of the EDU-VET project was develop online learning environments in technical education for the European metal industry, creating a strategic partnership with colleagues from across the VET sector within the ERASMUS+ programme. EDU-VET focuses on the creation of online courses using a learning platform and supports the use of digital technologies within learning in the metal sector, to reduce or remove barriers to education.

- Creation of new teaching and learning environments for VET (vocational education and training)
- Supporting the use of digital technologies within learning in the metal sector to reduce or remove barriers to education
- Design, implementation and testing of innovative teaching and learning within the VET metal sector
- Creation of EDU-Curriculum and online-courses on a learning platform for initial vocational education (i-VET) as well as an online-showroom for insights (texts about objectives, products, processes, contact data, photos, video or audios) into real companies in the metal work sector to foster teaching on an authentic basis.
- Providing a handbook and guideline for teachers to support them with pedagogical hints, information about the use of the online courses in blended learning scenarios and with additional learning and teaching materials and resources.

The project grew from the realisation that for vocational schools, moving towards a digitised curriculum was proving to be a huge challenge. Whilst many younger learners are practised users of new media, due to their familiarisation of technology and devices such as smart phones and tablets, within schools and educational environments the focus was still on more traditional, practical methods of teaching and learning. This was creating barriers in the effective engagement with learners, who use a wide range of digital media across all other aspects of their life, and was limiting accessibility for some students. For teachers and VET-schools the changes in social life and advances in technology meant that a new approach was required. It was acknowledged that VET-schools needed to provide not only Smartboards and a few computer classrooms for their students, but to show they were capable of adapting to the shift away from purely classroom based teaching towards the use of new technologies, creating a curriculum which included a blended approach and

integrated eLearning in their daily teaching activities. This is a core anchor point for the EDU-VET project.

The Project:

When the partners first met and agreed the outcomes of the project at the kick-off meeting in Paderborn in November 2019, the rationale was to develop a blended curriculum, with the inclusion of some digital content, allowing for learning to take place outside of the traditional classroom environment. It was apparent that each educational institution had a slightly different approach to the use of new media within the classroom, with some schools using a range of digital tools and platforms already. So, this formed the basis of the research report (IO1) and the creation of the modules for the on-line platform (IO2) and each partner was tasked with digitising specific areas of the curriculum.

Within 4 months of the meeting, at the point when the first IO (*Summary Research Report on the use of eLearning in metal industry*) was due for completion, the advent of Covid-19 and a global lock-down meant that each partner institution was faced with the very sudden reality of having to adapt their full curriculum to on-line learning, and much of the work we had planned to do as part of the EDU-VET project then became problematic, and at times, redundant. Businesses closed their doors, tutors & students were all working remotely and we were tasked with trying to engage employers and stakeholders in a project which was already becoming out of date. Against this backdrop, it has been difficult for some of the partners to achieve all of the goals that they set out with.

This document is aimed at supporting VET schools and other institutions to incorporate elements of EDU-VET project into their curriculum, but acknowledges that many schools will have already begun to digitise much their curriculum, following the events of the last 2 years. The hope is that they will take the key themes and best practice from the work the partners have done and progress this, beyond the project lifetime to ensure sustainability, further development of digitising the curriculum and increased impact at a local, regional, national and EU level.

The resources created by the EDU-VET partners includes the creation of an on-line learning platform, giving students access to a range of information, advice and guidance for educators, school leaders and decision makers. The information provided is aimed at supporting the digitisation of the metal working curriculum; for these resources to be used as a starting point, allowing each institution to continue to develop their own resources and remove barriers to learning by

adopting a modern, blended approach to teaching. A brief overview of the project resources is provided with guidance on how best to utilise them in educational settings.

2 Focus Groups & Feedback – summary of key points

To evaluate whether the aims of the EDU-VET project had been met, partners were asked to engage with a range of relevant stakeholders to gain feedback on the resources created and the ideology behind the project. Some partners struggled to get full engagement with employers and schools, due to the on-going Covid restrictions, but where focus groups were held, the feedback was overall very positive.

The questions the partners focused on included:

- Explain how the introduction of new media/digitisation within the curriculum has benefitted the progression/attainment of learners
- How have tutors/assessors adapted to blended learning/ E-learning? Has this led to a more innovative approach to teaching?
- Is there a gap between the expectations of learners and the reality of the digital offer? How do we meet the needs of learners and employers?
- How do we ensure continuing development of resources to meet the demand of an increasingly technologically competent cohort of learners?
- How do we ensure the curriculum reflects the needs of the local, regional and national metal working sector?
- Has the advent of Covid-19 accelerated the development and implementation of a digital curriculum and what impact (positive or negative) has this had?

Not all partners covered each question in detail, as they all worked with different stakeholders in their focus groups, but overall, there was a level of consistency with the feedback gained. The main focus was to look at how the introduction of the blended curriculum had been implemented within VET schools, and the impact this has had upon the learners and the teaching staff. Recommendations for how to continue the legacy of EDU-VET, beyond the end of the formal project

deadline, will be based upon these responses. Outlined below are some samples of the feedback partners received.

Explain how the introduction of new media/digitisation within the curriculum has benefitted the progression/attainment of learners – key points

All participants agreed that the introduction of new technologies and media within the curriculum has been of benefit to learners, as it enriched their learning experience as it allowed them to work more autonomously and independently. Increased accessibility, ease of completion and fostering creative thinking were all seen as benefits, with the emphasis on self-reliance and problem-solving skills being particularly positive outcomes. There was a concern that relying too heavily on digital platforms, where the information is always to hand, may impact upon the learner’s ability to memorise and retain information, but overall, the benefits to engagement, progression and achievement were very positive. As we move towards a more technologically advanced workforce, the skills our students learn in school and college need to prepare them for a real work environments.

Berufskolleg Bocholt-West (BKBW)	<ul style="list-style-type: none"> • Digital teaching creates a connection between theory and practice • Development and fostering of new digital skills, which are important for everyday work and private life
University Paderborn (UPB)	<ul style="list-style-type: none"> • Self-regulated learning: adapting one’s own learning pace • Improvement of technical know-how ◇ fundamental for the world of work
Lancaster & Morecambe College (LMC)	<ul style="list-style-type: none"> • Developing independent, solution-focused, learning skills • Accessible and easy to update content, keeping it relevant
Centro Integrado de Formación Profesional Someso (CIFP)	<ul style="list-style-type: none"> • Increased motivation – creative, modern, accessible & flexible • Can be used by learners with special educational needs to better reinforce the contents and to acquire the necessary skills in an easier way

How have tutors/assessors adapted to blended learning/ E-learning? Has this led to a more innovative approach to teaching? – key points

From the perspective of the tutors and training coordinators, the processes for creating and implementing the blended curriculum was time-consuming and very much dependent upon the individual institutions' IT resources and infrastructure. However, the advent of Covid-19 forced the transfer of most learning on-line, so this created an environment where education staff were more open to adopting a blended approach, but without the necessary training and resources this will not be effective. BKBW's feedback that *"Nonexistent or poorly developed digital infrastructure leads to problems in classes...and opportunities for further training must be offered."* was echoed by all partners and stakeholders.

Berufskolleg Bocholt-West (BKBW)	<ul style="list-style-type: none"> • Digital media is often not used effectively in schools → no great added value despite great potential
University Paderborn (UPB)	<ul style="list-style-type: none"> • Digital media supports teachers and learners to structure the learning process • Individualisation of teaching processes i.e.) different support for learners is possible, depending on the level of support
Lancaster & Morecambe College (LMC)	<ul style="list-style-type: none"> • Tutors are willing to learn but need adequate training & resources • New teaching tools require new ways of teaching which can be challenging for staff • Teaching & learning can be easily reviewed & adapted to meet the needs of the learners
Centro Integrado de Formación Profesional Someso (CIFP)	<ul style="list-style-type: none"> • Adaptation has been a self-learning process for the teaching staff, who are professionals with a high predisposition for innovation and for trying out new solutions. • One of the objectives still to be achieved is to have easy and useful programmes to avoid plagiarism both in assignments and in assessment tests.

Is there a gap between the expectations of learners and the reality of the digital offer? How do we meet the needs of learners and employers?

Not all partners addressed this issue in depth but those who did reported concerns around the digital disadvantage faced by a number of learners, who are not able to access technology outside of the classroom, due to financial constraints. Both LMC and CIFP recruit students from areas with high levels of economic deprivation, so this is something that must be addressed regionally and nationally, to ensure parity for all learners. During the Covid pandemic, LMC had to provide laptops and dongles for around 15% of their full-time students to enable them to access remote learning; although it is acknowledged that a blended curriculum can make learning more accessible to some, not everyone will benefit from this process. It was also noted that many learners (and teaching staff) wrongly assume that digital learning is ‘easier’ and less time-consuming, and therefore may not devote enough time and energy to the online modules.

It was also apparent that the development of new digital resources must reflect the realities of the regional workforce and the Labour Market Information (LMI). Engaging with local employers across the metal-working sector is key to ensure that learners are developing relevant employability skills.

Lancaster & Morecambe College (LMC)	<ul style="list-style-type: none"> • Ongoing dialogue with employers to ensure our curriculum meets the needs of industry i.e.) development of resources for new VR suite
Centro Integrado de Formación Profesional Someso (CIFP)	<ul style="list-style-type: none"> • The digital educational resources lack human interaction and make it difficult for students to give feedback on whether these new tools are sufficient for them to understand the contents, to be able to participate and to be protagonists in the teaching-learning process.

Has the advent of Covid-19 accelerated the development and implementation of a digital curriculum and what impact (positive or negative) has this had?

This final question was one the partners felt was crucial to discuss, as it had to be acknowledged that the advent of Covid-19 had an enormous impact on the project; not just in how each partner was able to engage with stakeholders and learners, but also due to the increased use of digital technology within education, and the growth in on-line learning platforms.

It was interesting to see that this issue was met with both positive and negative responses, with most of the positive outcome being the ‘forced acceptance’ of on-line and remote learning, during each partner country’s lockdown period(s), which has led to the continued use of digital learning by the schools. It was noted by UPB that *“at the beginning of the pandemic, no learning platforms were implemented at the schools but as the pandemic progressed, interest increased enormously and schools were ready to implement learning platforms.”*

Issues with digital disadvantage, a lack of consistency around learners’ technical abilities and the difficulty of keeping young people engaged throughout the period of lockdown, which has resulted in a lack of progress & achievement, were all cited as concerns.

<p>Berufskolleg Bocholt-West (BKBW)</p>	<ul style="list-style-type: none"> • The use of learning platforms in schools has increased significantly since the Corona pandemic • Digital equipment for students and teachers has been improved → for example laptops/tablets for teachers • Digital teaching materials have been increasingly developed since the pandemic • Improved digital infrastructure since school closures
<p>University Paderborn (UPB)</p>	<ul style="list-style-type: none"> • Digital media can be used to maintain contact between teachers and students and between peers • New, innovative learning methods are developing that make learning more attractive and create the opportunity to learn independently

	<ul style="list-style-type: none"> • Since the first school closures, there have been initial important impulses for the digital transformation of schools. The equipment with digital end devices is improving, teaching platforms are available and digital educational content is being developed. • WLAN access at the schools is also to be improved in the in the coming years as part of the implementation of the Digital Pact.
Lancaster & Morecambe College (LMC)	<ul style="list-style-type: none"> • The transition to on-line learning (via MS Teams) resulted in all teaching staff becoming familiar with, and more open to, creating & delivering digital content • Additional government funding allowed us to provide digital equipment (laptops & dongles) to learners
Centro Integrado de Formación Profesional Someso (CIFP)	<ul style="list-style-type: none"> • Teachers and students have acquired digital competences that would otherwise have taken much longer. It is clear that these skills are here to stay and to improve everything that has been done to date. • Those most reluctant to change have to adapt to the new situation and once that barrier is crossed, it is a point of no return. The only option is to implement the use of these tools to optimise the teaching and learning process. • The creation of resources for e-learning. These resources can then be used for all types of teaching (virtual, blended or even face-to-face).

3 Project Recommendations

At the outset of this project, all partners were asked to consider some key questions and recommendations, when discussing the legacy of the EDU-VET project. As we have acknowledged throughout this document, the advent of the Covid-19 pandemic, from March 2020 to the present day, has refocused some of the initial issues, as certain elements were accelerated to a level we could not have imagined.

- the importance of the use of new media approaches and eLearning activities in the field of VET for the metal if education provision is to achieve the penetration levels necessary to achieve the EU 2020 goals
- the need to focus on new emerging opportunities of learning with innovative approaches
- the need of a solid and attuned common curricular approach
- the importance of future accreditation, certification and the fit to EC-VET standards
- the importance of bringing the worlds of VET and work closer together by designing curriculum resources that are relevant to the market place

There is no doubting the importance of embedding new media and eLearning modules into the curriculum for the metal-work sector. This has been proven through the testing of the resources created during the project, with the recognition that creating a blended approach allows for greater access and helps students to develop independent learning & self-management skills. With the introduction of national lockdowns in the spring of 2020 across each partner country, elements of this process were introduced at a much fast rate than we had expected, and brought with it an insight into how the development of digital platforms could be progressed.

However, we must be certain that in our haste to create and develop new ways of delivering teaching and learning, we do not leave any cohorts of students behind. Continuing to engage with learners, gaining their ideas and feedback, whilst these resources are created is a key strategy to ensure that the curriculum continues to

match their needs and abilities. Whilst the introduction of digital learning platforms can increase access for some, it can also create barriers for others, so there has to be a flexible, cautioned approach to ensure parity of education. This is a process which should start in primary/elementary school and it would be beneficial for a structured approach to digital skills be introduced across the wider school-system.

The continued engagement with local, regional and national employers across the sector is crucial to the successful legacy of the EDU-VET project. There is little point creating a digitised curriculum, if the content does not accurately reflect the real work environments that our students will progress into. This includes further development and investment in technologies that will link the curriculum to the growing Green Jobs sector (wind turbines, retrofitting housing stock, heat pumps, electric vehicle maintenance etc) where the use of VR suites and robotics labs will enable learners to access simulated work environments.

Key recommendations include:

- A consistent, on-going approach to upskilling tutors and training coordinators, to ensure they are competent and confident to create and deliver digital learning
- Curriculum framework needs to be adapted to allow for successful embedding of blended learning, ensuring all key elements are met
- Substantial investment will be required to ensure IT infrastructure is fit for purpose (resources and personnel); not just within the school environment but to ensure learners who are at a digital disadvantage are able to access equipment
- Investment in large-scale digital resources, such as VR suites, enabling students to access simulated work environments
- Development of recognised qualifications and accreditation for digital modules
- On-going dialogue with feeder/primary/elementary schools to recognise gaps in learners' digital education, to foster the development of a structured approach throughout education system

4 Conclusion

The EDU-VET project has been funded by the EU Erasmus+ Programme. The project consortium has worked closely with a wide range of stakeholders (tutors, students, employers, careers advisors) across the four partner countries to produce a range of resources to support the digitisation of the metal-working curriculum, focusing on the introduction of an initial blended learning package. At the time the project was first envisaged, the implementation of a digital learning platform was an innovative idea; the aim was to reduce barriers to learning by increasing accessibility and helping students to develop independent study skills. The hope was that this would create a legacy of further development of digital resources across the wider curriculum, in collaboration with employers and in response to local labour market information. This would allow for a flexible, highly adaptable suite of content; fit for purpose and relevant to the changing requirements of the sector.

The impact of the Covid pandemic has had both positive and negative outcomes on the project. On one hand, it helped steer both educational institutions and learners towards the use of on-line learning, and in turn has speeded-up the acceptance of digitisation of elements of the curriculum. However, it also meant that many of the employers and stakeholders we had hoped to engage with over the lifespan of the project, were unable or unwilling to participate in all of the planned activities. Regardless, the partners were able to create a suite of resources which are now being used in their VET schools, and will continue to adapt and develop the curriculum, where appropriate. The project research, website, social media and information campaign all serve to further this cause.

As the project funding period comes to an end, the recognition that local, regional, national and EU wide initiatives are required to continue to build on the success of this project. The growing Green Jobs sector, (including engineering and metal-working) demands a workforce that is technologically adept and many schools are now looking to invest in high-tech equipment such as VR suites, which will be required to give students simulated work experience opportunities. The EDU-VET partners encourage all educational leaders and decision makers to keep the issue of advancing digital learning across the whole school-system, in discussions with educational networks, associations and governing bodies.