

Table of contents

Table of contents	1
Context	2
Project Identification	2
National Agency of the Beneficiary Organisation	2
Project summary	2
Project Description	4
Summary of Participating Organisations	5
Participant support	6
Overview of participants with fewer opportunities involved in the project:	7
Project Management	7
Implementation	9
Transnational Project Meetings	11
Project Results	14
Multiplier Events	15
Learning/Teaching/Training Activities	16
Participants in Learning/Teaching/Training Activities	17
Follow-up	17
Impact	19
Dissemination and Use of Project Results	20
Sustainability	22
European Language Label	22
Budget	26
Budget summary	26
Project total amount	27
Project Management and Implementation	27
Transnational Project Meetings	27
Project Results	27
Multiplier Events	29
Learning/Teaching/Training Activities	29
Annexes	31
Checklist	32

Context

This section resumes some general information about your project.

Programme	Erasmus+
Key Action	Cooperation among organisations and institutions
Action	Cooperation partnerships
Action type	Cooperation partnerships in higher education
Field	Higher Education
Call	2021
Round	Round 1
Report Type	Final
Language used to fill in the form	English

Project Identification

Grant Agreement Number	2021-1-CZ01-KA220-HED-000023098
Project title	Digital support of educational methods in situations complicating practical training on CNC technologies in field of wood processing
Project Acronym	ROBODIG
Project start date	01-02-2022
Project end date	31-01-2025
Project Total Duration (months)	36 months
Beneficiary Organisation Full Legal Name (Latin characters)	MENDELOVA UNIVERZITA V BRNE

National Agency of the Beneficiary Organisation

Identification	CZ01 - Dům zahraniční spolupráce (DZS) Centre for International Cooperation in Education
----------------	--

For further details about the available Erasmus+ National Agencies, please consult the following page:

here

Project summary

This section summarises your project and the organisations involved as partners.

Please provide short answers to the following questions, summarising the information you have provided in the rest of the report.

Please use full sentences and clear language. The provided summary will be made public by the European Commission and the National Agencies.

Background: Why did you apply for this project? What were the needs you have addressed?

The main motivation for this project was the status of education in modern CNC technologies within wood processing. Student interest in this field is declining, largely due to inadequate educational conditions. Although vocational schools have largely acquired CNC equipment through significant investments in Central Europe, the main issue remains a lack of study materials and teaching methods. Many teachers do not fully understand CNC technologies and are seeking effective teaching strategies. These technologies are complex, requiring comprehensive approaches and direct machine demonstrations. The COVID-19 pandemic severely impacted these fields as students couldn't attend in-person classes. Well-focused videos can mitigate the negative effects of such disruptions, applicable in situations like military conflicts or student disabilities. Videos, being the language of the current generation, can quickly and effectively clarify complex topics. The video format is popular for enhancing the field's attractiveness. To ensure its future, teaching methods must be unified, allowing technical fields to offer more international exchange opportunities with recognized education levels.

Objectives: What did you want to achieve by implementing the project?

The main goal of the project, based on its motivation, was to create a set of educational videos that clearly explain CNC technology in woodworking, from data preparation to production. Another goal was to establish an international team of experts to develop teaching methods for modern technologies in wood processing and product manufacturing. Additionally, it was important for teachers to better engage with students and effectively impart CNC technology knowledge, thereby popularizing this technical field and making it accessible to the wider public.

Implementation: What activities did you implement in your project?

In our project, we implemented a comprehensive set of activities designed to address key challenges in the field of CNC woodworking technology education and to achieve our project objectives.

Intensive Courses and Workshops:

We conducted intensive courses on CNC woodworking technologies in Volyne and Intensive Course on robotics in Zvolen. These courses provided both theoretical knowledge and practical skills, integrating CAD/CAM software training and hands-on CNC machinery experience. Additionally, a special workshop was organized to present project outputs and discuss future developments and collaborations.

International Meetings: We conducted three international meetings to facilitate collaboration and project management. The kick-off meeting took place in Brno, followed by a regular meeting in Poznan, and a termination meeting in Zvolen. These gatherings were crucial for aligning objectives, sharing progress, and planning future activities. They also strengthened partnerships and encouraged the exchange of ideas among participants, fostering a collaborative environment.

Development of Instructional Videos:

A core activity of the project was the creation of 12 professional instructional videos, each approximately 30 minutes long, tailored to CNC woodworking technologies. These videos were designed to address the gap in practical teaching resources and to complement traditional educational methods. By focusing on real-world applications and practical procedures, the videos enhance students' understanding of complex concepts.

The topics covered in these videos align with the educational plan, ensuring they integrate seamlessly into existing curricula. The titles include:

- Introduction to the CNC Woodworking Machines: <https://youtu.be/jpAAgMU2uEM>
- Basic Principles of CNC Woodworking Technology: <https://youtu.be/Wp3lwLeg-CM>
- CNC Tooling – Part 1: <https://youtu.be/xDktKe-MNMk>
- CNC Tooling – Part 2: <https://youtu.be/8lXJuyhxg9c>
- Service and Maintenance of CNC: https://youtu.be/aHN8LVJ8_rY
- Nesting CNCs: <https://youtu.be/8AT9rkzL0Qk>
- CNC Drilling Centres: <https://youtu.be/pOajQiwslIM>
- CNCs for Timber-Based Constructions: <https://youtu.be/eC0GYcOjVJY>
- Instructions for Preparing CNC Programs in Alphacam - Basic Operations: <https://youtu.be/6UG0dLLUHBg>
- Instructions for Preparing CNC Programs in Alphacam – 3D Surface Machining: <https://youtu.be/RKFzEb-ZsOo>
- Robots in Wood Processing Industry: <https://youtu.be/TtaZNmwCwZw>
- Alternative CNC Technologies for Wood Industry: <https://youtu.be/NMKLJtbyfcs>

By utilizing engaging formats, the videos are both informative and visually appealing, meeting the digital preferences of today's learners. Each video incorporates step-by-step demonstrations of CNC operations, providing clear and accessible guidance for students. This approach ensures that students can revisit the material as needed, facilitating self-paced learning and reinforcing classroom instruction.

Moreover, the videos serve as a resilient educational tool, adaptable to various teaching scenarios, including remote learning environments. By integrating these videos into curricula, educators can offer a more interactive and dynamic learning experience, bridging the gap between theoretical knowledge and practical skills.

These instructional videos are available on our YouTube channel and shared through partner websites, maximizing their reach and impact. This open-access approach ensures that educators and students across different regions can benefit from these resources, promoting wider adoption and innovation in teaching practices.

Social Media Engagement: We established a presence on Instagram with our CNCwoodfans account, where we shared short popularization videos about CNC woodworking. These videos aimed to engage a broader audience by presenting CNC technologies in a fun and accessible manner. By leveraging social media, we reached a wide demographic, promoting awareness and interest in the field beyond traditional educational settings.

Rollup Posters and Online Presence: We promoted the project through rollup posters and web pages on partner sites, ensuring visibility and access to project results. These channels facilitate the dissemination of knowledge and resources to a wider audience, both locally and internationally.

Networking and Collaboration: Throughout the project, we fostered collaboration among educators and industry partners, encouraging the exchange of knowledge and best practices. This network supports ongoing innovation and sets the foundation for future projects, including those focused on AI and automation technologies.

International Events and Conferences: We participated in events like the International Conference Chip and Chipless, where we shared project outcomes with attendees from various European countries. These events provided platforms to introduce our work to a diverse audience and receive valuable feedback.

By implementing these activities, we aimed to modernize teaching methods, increase the attractiveness of the woodworking field, and provide sustainable, high-quality educational resources. Our efforts have laid the groundwork for continued innovation and the expansion of our approach to larger-scale projects and different fields.

Results: What were the concrete outputs and other results of your project?

The project yielded several concrete outputs and significant results, with a primary focus on the development of instructional videos and social media engagement.

Instructional Videos: We produced 12 professional instructional videos, each approximately 30 minutes long, tailored to CNC woodworking technologies. These videos covered a range of topics, including "Introduction to the CNC Woodworking Machines," "Basic Principles of CNC Woodworking Technology," and "Robots in Wood Processing Industry." Designed to enhance practical understanding, these videos provided step-by-step demonstrations and were aligned with educational curricula. They serve as valuable resources for both classroom and remote learning, addressing the need for accessible, high-quality educational materials.

Social Media Engagement: Our Instagram account, CNCwoodfans, played a crucial role in disseminating project outcomes. By sharing short popularization videos and engaging content, we reached a broader audience, promoting awareness and interest in CNC technologies. This platform allowed us to connect with students, educators, and industry professionals, fostering a community around modern woodworking education. The engaging format of social media content helped demystify complex topics, making them more accessible and appealing.

Online Accessibility: The videos and related materials were made available on partner websites and our YouTube channel, ensuring broad accessibility.

This open-access approach maximized the reach of our educational tools, allowing educators and students worldwide to benefit from the project's outputs.

Enhanced Educational Practices: By integrating these videos and social media strategies, we modernized teaching methods and increased the attractiveness of the woodworking field. The project encouraged educators to adopt innovative approaches, supporting a shift towards more interactive and student-centered learning environments.

Project Description

In this section, you are asked to give information about the objectives and topics addressed by your project;

What was the most relevant horizontal or sectoral priority addressed by your project?

HORIZONTAL: Addressing digital transformation through development of digital readiness, resilience and capacity

What were the other relevant horizontal or sectoral priorities addressed by your project?

HE: Stimulating innovative learning and teaching practices

In case the above selected priorities are different from the ones in the application, please explain why

What were the most relevant topics addressed by your project?

Digital content and pedagogical practices
New learning and teaching methods and approaches
Promotion of alternative forms of participation

In case the selected topics are different from the ones in the application, please explain why

Please provide a summary of your project's concrete results and achievements. Were all original objectives of the project met? Please comment on any objectives initially pursued but not achieved and describe any achievements exceeding the initial expectations.

The project successfully achieved its primary objectives, producing several concrete results and notable achievements that have significantly impacted CNC woodworking technology education.

Instructional Videos: A major accomplishment was the creation of 12 professional instructional videos, each approximately 30 minutes long. These videos covered essential topics such as "Introduction to the CNC Woodworking Machines," "Basic Principles of CNC Woodworking Technology," and "Robots in Wood Processing Industry." Designed to enhance practical understanding, these videos provide step-by-step demonstrations and align with educational curricula. Although we initially planned to include subtitles in multiple languages, we opted for English-only videos due to technical challenges and excessive time consumption. However, with the availability of AI tools, subtitles can be easily added and Youtube which serves as main storage for our videos can even generate subtitles of any language possible automatically, minimizing the impact of this limitation.

Social Media Engagement: Our Instagram account, CNCwoodfans, and our YouTube channel were instrumental in disseminating project outcomes. By sharing short, engaging videos and interactive content, we successfully reached a broad audience, promoting awareness and interest in CNC technologies. This social media strategy helped demystify complex topics and fostered a vibrant online community around modern woodworking education.

Learning and Teaching Activities: In addition to the planned activities, we conducted an intensive course on robotics at the Technical University in Zvolen. This course complemented the existing curriculum, providing students with valuable insights into robotics and automation in the woodworking industry. The course included both theoretical lectures and practical sessions, further enhancing the educational experience.

International Meetings and Collaboration: We held three international meetings—in Brno, Poznan, and Zvolen—that facilitated collaboration and project management. These gatherings were crucial for aligning objectives, sharing progress, and planning future activities. They strengthened partnerships and encouraged the exchange of ideas among participants, fostering a collaborative environment.

Online Accessibility and Open Access: The videos and related materials were made available on partner websites and our YouTube channel, ensuring broad accessibility. This open-access approach maximized the reach of our educational tools, allowing educators and students worldwide to benefit from the project's outputs.

Enhanced Educational Practices: The integration of videos and social media strategies modernized teaching methods and increased the attractiveness of the woodworking field. The project encouraged educators to adopt innovative approaches, supporting a shift towards more interactive and student-centered learning environments.

Overall, the project met its original objectives, although it required an additional year to complete due to unforeseen challenges. The achievements not only fulfilled but, in some areas, exceeded expectations, particularly in terms of social media engagement and the additional robotics course. These efforts have laid a strong foundation for ongoing innovation and engagement in CNC woodworking education, setting the stage for future projects focused on AI and automation technologies.

In what way was the project innovative and/or complementary to other projects already carried out?

The project demonstrated innovation and complementarity in several key ways, enhancing CNC woodworking education and setting it apart from previous initiatives.

Innovative Use of Digital Media: One of the most innovative aspects was the development of 12 comprehensive instructional videos focused on CNC

woodworking technologies. These videos addressed a significant gap in educational resources by providing practical, step-by-step demonstrations aligned with current curricula. By utilizing engaging video formats, the project catered to the digital preferences of today's learners, making complex concepts more accessible and appealing.

Social Media Engagement: The project leveraged social media platforms, particularly Instagram and YouTube, to reach a broader audience. By creating the CNCwoodfans account, we shared short, engaging videos and interactive content. This approach not only promoted CNC technologies but also fostered a vibrant online community, encouraging collaboration and sharing among students, educators, and industry professionals. This strategy was innovative in its ability to demystify technical subjects and engage learners in a familiar digital environment.

Integration of Robotics and Automation: Complementing the core focus on woodworking, the project included an intensive course on robotics at the Technical University in Zvolen. This addition provided students with valuable insights into emerging technologies such as robotics and automation, broadening their understanding and skills. By incorporating these elements, the project complemented existing educational programs and addressed future industry needs.

Modern CNC Technologies and Real Contracts: The project was conducted using state-of-the-art CNC technologies and involved real contracts from industry partners. This hands-on approach provided students with practical experience and exposure to real-world scenarios. Educators who actively work with these machines led the lectures and commented on the instructional videos, offering students exclusive insights and a sense of connection to industry practices. This direct involvement ensured that students received high-quality, relevant education, enhancing their learning experience.

Student Involvement in Video Production: Students actively participated in the video-making process, an innovative approach that set a positive example of student involvement in the educational process. This engagement not only enriched the content but also empowered students, demonstrating the value of collaboration and active participation in their education.

Collaborative International Meetings: The project organized three international meetings in Brno, Poznan, and Zvolen, which were crucial for fostering collaboration and sharing best practices. These meetings facilitated the alignment of objectives and the planning of future activities, strengthening networks and encouraging the exchange of ideas across different educational and cultural contexts.

Open Access and Resource Sharing: Ensuring that all materials were made available online, the project adopted an open-access approach, maximizing the reach and impact of its educational tools. This openness complemented other projects by providing freely accessible, high-quality resources that could be adapted and used by educators and institutions worldwide.

Focus on Modernizing Educational Practices: The project encouraged educators to rethink traditional teaching methods, promoting a shift towards more interactive and student-centered learning environments. This focus on modernization complemented ongoing educational reforms by providing practical examples of how to integrate technology effectively into the classroom.

Adaptation to Crisis Situations: By creating versatile instructional videos, the project offered a resilient educational tool adaptable to various scenarios, including remote learning environments. This adaptability ensured continuity in education during crisis situations, such as the COVID-19 pandemic, complementing efforts to maintain educational quality under challenging circumstances.

Overall, the project's innovative use of digital media, integration of robotics, and focus on modern educational practices distinguished it from previous initiatives. By building on existing knowledge and resources, it complemented other projects while setting new standards for CNC woodworking education and beyond.

Summary of Participating Organisations

Role of the Organisation	OID of the Organisation	Name of the Organisation	Country of the Organisation	Type of Organisation	Accreditation of organisation (if applicable)	Partnership Entry Date	Partnership Withdrawal Date
Beneficiary	E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	Higher education institution (tertiary level)		01/02/2022	31/01/2025
Other organisation (non-beneficiary)	E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	Higher education institution (tertiary level)		01/02/2022	31/01/2025
Other organisation (non-beneficiary)	E10095133	Vyšší odborná škola a Střední průmyslová škola Volyně, Resslova 440	Czechia	School/Institute/Educational centre – Vocational Training (tertiary level)		01/02/2022	31/01/2025
Other organisation (non-beneficiary)	E10208976	UNIwersytet PRZYRODNICZY W POZNANIU	Poland	Higher education institution (tertiary level)		01/02/2022	31/01/2025

Total number of participating organisations 4

Associated Partners

In addition to the above formally participating organisations, did you involve associated partners in your project?

NO

Participant support

Please briefly describe how you selected and involved participants in the different activities of your project.

Participants in the project were selected through a structured process to ensure alignment with the objectives of each activity. For the intensive courses on woodworking technologies and robotics, students were chosen based on their background in CNC technology and proficiency in English, verified through brief interviews. The selection was voluntary, targeting those who had completed relevant coursework and demonstrated a keen interest in further developing their skills.

Local students from partner institutions participated as part of their studies, adapting their schedules to engage fully in the activities. Educators from various departments were also encouraged to participate, fostering a culture of innovation and collaboration in teaching methods.

In the video-making process, participants were selected on a voluntary basis. We were pleasantly surprised by the high level of interest from students eager to contribute to the production of instructional videos. This enthusiasm highlighted the students' commitment to their education and their desire to be actively involved in shaping learning resources. Their participation provided invaluable hands-on experience and a sense of ownership, demonstrating the power of student engagement in educational projects.

The selection process aimed to include motivated individuals with the necessary skills to both benefit from and contribute to the project. By involving a diverse group of participants, we created a dynamic and collaborative learning environment that enriched the overall educational experience and set a strong foundation for future initiatives.

Participants with fewer opportunities: did your project involve participants facing situations that make their participation more difficult?

NO

Overview of participants with fewer opportunities involved in the project:

Total number of participants with fewer opportunities in the project	0
Reason	Number of participants
Cultural differences	0
Disability	0
Economic obstacles	0
Educational difficulties	0
Geographical obstacles	0
Health problems	0
Migrant background obstacle	0
Other reasons	0
Social obstacles	0
Total	0

How did you support these participants so that they were fully engaged in the ongoing activities?

Participants were supported through a range of measures to ensure full engagement in the ongoing activities of the project.

Comprehensive Orientation: At the beginning of each activity, participants received detailed orientations to familiarize them with the project goals, expectations, and resources available. This ensured everyone was aligned and understood their roles and contributions.

Mentorship and Guidance: Each partner institution provided mentors who offered continuous support and guidance. These mentors, often educators experienced in CNC technologies and robotics, were available to answer questions, provide feedback, and assist with challenges, creating a supportive learning environment.

Access to Resources: Participants had access to state-of-the-art equipment and software necessary for the intensive courses and video-making processes. This ensured they could fully engage with the practical aspects of the project, enhancing their learning experience.

Collaborative Environment: We fostered a collaborative atmosphere where students and educators could share ideas and insights. This was facilitated through group discussions, workshops, and feedback sessions, encouraging active participation and peer learning.

Recognition and Motivation: Efforts were made to recognize the contributions of all participants, highlighting their achievements in project meetings and through social media channels. This recognition not only motivated participants but also built a sense of community and shared purpose.

Skill Development Opportunities: Participants were offered opportunities to develop additional skills through workshops and training sessions. This not only supported their engagement but also contributed to their personal and professional growth.

Financial Support for International Activities: For international activities, participants' travel expenses were covered by the grant. This financial support ensured that all eligible participants could engage without financial barriers, allowing them to fully participate in international meetings and exchanges.

Through these support measures, we ensured participants were fully engaged and able to contribute meaningfully to the project's success.

Approximately, how many persons not receiving a specific grant benefited from or were targeted by the activities organised by the project (e.g. members of the local community, young people, experts, policy makers, and other relevant stakeholders)? Please enter the number of persons here:

200

Please describe briefly how and in which activities these persons were involved.

Mostly students from partner schools which hosted and participated in workshops and courses, gaining practical skills in CNC technologies and robotics.

About 10 industry professionals visited to see machines in action, viewing videos that demonstrated CNC capabilities and the latest technological advancements.

Around 15 teachers from Slovenia attended excursions to observe our equipment and teaching methods in CNC practice, gaining new insights for their own education methods.

About 8 teachers and students from Bodin Videregoende Skolan observed CNC machine production, providing a unique opportunity to experience advanced operations firsthand, since they lack similar studies in their curriculum.

Project Management

How did you ensure proper budget control and time management in your project?

In managing our project, ensuring proper budget control and time management was paramount. To achieve this, we employed a financial manager with extensive experience in handling projects of similar scale. Their expertise in utilizing Excel tools proved invaluable for maintaining financial oversight and accuracy. The financial manager's role was crucial in developing comprehensive budget forecasts and conducting regular financial reviews, ensuring that

all expenditures were meticulously tracked and aligned with our financial goals.

To further enhance our time management strategies, we implemented a specialized Excel timesheet system. This tool enabled precise tracking of project hours, ensuring that all team members could efficiently log their time against specific tasks and milestones. By regularly reviewing these timesheets, we were able to identify potential bottlenecks and make informed adjustments to our project timeline, thereby optimizing productivity and maintaining adherence to our schedule.

Good communication with project partners was also instrumental in our success. Bound by a robust consortium agreement, we fostered an environment of transparency and collaboration. Regular meetings and updates ensured that all partners were aligned with the project objectives and timelines. This open communication channel allowed for the swift resolution of any issues that arose, minimizing disruptions and maintaining project momentum.

Overall, the combination of expert financial management, precise time-tracking tools, and strong collaborative practices facilitated effective budget control and time management, contributing significantly to the successful execution of our project.

Monitoring: How were the progress, quality and achievement of project activities monitored? Please describe the qualitative and quantitative indicators you used. Please give information about the involved staff, as well as the timing and frequency of the monitoring activities.

In the initial phase of the project, we established a robust communication platform utilizing Microsoft Outlook and its connected tools, as all partner organizations were familiar with this system. This facilitated seamless communication and coordination across teams. To effectively monitor the progress, quality, and achievement of project activities, we employed both qualitative and quantitative indicators. These included regular updates on task completion, quality assessments of deliverables, and feedback from stakeholders.

Initially, monitoring activities were conducted monthly. However, as the project gained momentum and team members settled into their roles, we shifted to a bi-monthly schedule. This adjustment allowed for more focused monitoring while respecting the autonomy and expertise of involved staff. The production of outputs was evaluated quarterly. This approach ensured that any deviations from the project plan were identified and addressed promptly, maintaining alignment with project goals. As significant milestones, such as planned meetings or international activities, approached, we increased the monitoring frequency to weekly. This ensured thorough preparation and readiness for these key events. In the final six months of the project, we intensified monitoring efforts, reviewing completed tasks weekly or bi-weekly. This rigorous approach ensured that all project objectives were met efficiently and on schedule.

To track progress and share results, we utilized a system of uploading recent video files to a dedicated OneDrive on Mendel University's platform. This allowed for real-time updates and visibility on the development of CNC wood fan projects, providing a clear picture of advancements and areas needing attention. The monitoring process involved a cross-functional team comprising project managers, technical leads, and quality assurance personnel. Each member brought specialized expertise, ensuring comprehensive oversight of the project activities.

Through a structured monitoring approach, we ensured that the project stayed on track, met quality standards, and achieved its planned outcomes. The flexibility in our monitoring strategy allowed us to adapt to the project's evolving needs, ultimately leading to its successful completion.

Evaluation: How did you evaluate to which extent the project reached its results and objectives? What indicators did you use to measure the quality of the project's results?

To evaluate the extent to which the project achieved its results and objectives, we implemented a structured approach utilizing specific indicators to measure the quality of the project's outcomes. Each partner was tasked with producing a fixed quantity of three videos. However, estimating the completion extent of each was challenging.

To address this, we developed a detailed list of tasks and work progress indicators. Each desired output was divided into smaller tasks, such as scenario creation, shot listing, live shot planning, and post-production processes. This breakdown made it easier to monitor the progress of each video, identifying what was completed and what remained. This approach also aided in designing effective tools to streamline our workflow and enhance efficiency.

Despite these measures, adhering to the original time schedule proved difficult. Our initial time estimates for completing the results were underestimated, primarily due to our limited experience with the video production process. This learning curve highlighted the importance of flexibility and adaptability in project planning and execution.

By focusing on task-based progress evaluation, we were able to gain a clearer understanding of the completion status of each video. This method not only facilitated better monitoring but also provided valuable insights for future project planning and time management in similar endeavors.

If relevant, please describe any difficulties you have encountered in managing the implementation of the project and how you and your partners handled them. How did you handle project risks (e.g. conflict resolution processes, unforeseen events, etc.)?

Throughout the project, we encountered several significant difficulties in managing its implementation. One major challenge arose when a key team member took a long-term leave for six months, followed by maternity leave, and did not return. This was particularly problematic due to the scarcity of CNC technology experts, especially in the education field. As a result, we had to extend the project duration by a year. Despite this extension, meeting the deadlines and maintaining the desired quality proved challenging.

Another complication was our lack of experience with the video-making process. Our initial time estimates were insufficient, leading to a substantial number of additional hours that needed to be covered through external sources and personal time. Fortunately, most team members were willing to contribute their free time to ensure the project's success.

The limited knowledge of CNC technologies among team members posed another hurdle. The project heavily relied on three experts who not only had to create high-quality commentaries as scenarios but also operate the CNC machines. This left minimal work for other team members during the initial stages. Even in post-production, the expertise of these specialists was crucial to accurately correlate video content with the scenarios. These experts ended up contributing an extreme amount of extra hours due to their indispensable role.

Another, though less problematic, issue was our inexperience with sending students to project events. We did not allocate a proper financial chapter for

student stipends, which meant we couldn't pay students the unit costs. Instead, we had to reimburse real costs, which were lower, due to internal documents specifying maximum travel costs.

Addressing these difficulties required enthusiasm and a strong commitment to creating a valuable educational tool. Recruiting additional team members was not feasible, as the initial scarcity of experts was the primary reason for undertaking this project. Ultimately, extending the project was the only viable solution to manage these challenges effectively.

Implementation

This section asks for information about all the stages of the project: implementation of main activities including practical arrangements, participants' profile, impact, dissemination of the results and future plans;

Please describe the project activities and expenses covered with the Project Management and Implementation grant. If the requested amount is different from the automatically calculated one based on the project duration, please explain why.

The primary focus of the budget for the Project Management and Implementation grant was allocated to cover personnel expenses for project managers across all four partner organizations. This funding was essential to ensure that qualified individuals were available to oversee and coordinate the various activities involved in the project.

In addition to personnel costs, a significant portion of the budget was dedicated to acquiring vital equipment for video recording. We prioritized purchasing shared software solutions wherever feasible, promoting collaboration among partners. Notably, the Higher Vocational School in Volyně invested in Adobe Premiere, a leading cutting software, which included sufficient cloud storage to accommodate our video content. This investment was crucial for effective video post-production.

The Technical University in Zvolen acquired an artificial intelligence tool designed to enhance voice quality, significantly increasing our productivity. This tool addressed challenges associated with time-consuming tasks and subpar live sound quality, thereby improving the overall output. Furthermore, we invested in GoPro cameras for installation inside machinery, ensuring optimal views during operation.

A key aspect of our implementation was the acquisition of high-quality sound equipment, including lavalier microphones, essential for capturing clear audio during recordings. Additionally, we procured equipment to securely hold and protect the cameras installed within the machinery, ensuring the safety and stability of our recording devices.

Another portion of the budget was allocated for small refreshments during international project meetings, fostering collaboration and engagement among partners. We also purchased wood materials and tools for CNC machining, which enhanced our capabilities for producing high-quality footage during manufacturing processes.

Thanks to the strategic sharing of tools and equipment, particularly between the Higher Vocational School in Volyně and Mendel University in Brno, we remained within the automatically calculated budget limit. This collaborative approach extended to the shared use of AI software, further optimizing resources.

Additionally, we allocated funds for creating and purchasing roll-up posters intended for dissemination purposes. Project T-shirts were also produced for use in videos; however, due to aesthetic considerations, their primary function evolved into serving as marketing tools. Lastly, a portion of the budget was dedicated to small gifts for attendees of the intensive course held in Volyně, enhancing participant engagement and appreciation.

In summary, the implementation activities effectively utilized the Project Management and Implementation grant, ensuring a comprehensive approach to project execution while adhering to budgetary constraints. Through careful planning and collaboration, we maximized our resources to achieve the project's objectives successfully.

Please describe the methodology you applied in your project.

At the outset of the project, our fundamental approach was to distribute video creation responsibilities evenly among the four partners. Each partner was tasked with producing three videos, ensuring that the workload was approximately balanced. Although we aimed for a unified style, we soon recognized that each CNC expert had distinct preferences in scriptwriting. Consequently, we maintained a degree of uniformity by adopting a consistent introductory slide for all videos.

To enhance collaboration and efficiency, we established a shared cloud storage system where all partners could upload their videos, facilitating access to materials that might benefit others. The primary method employed to achieve our project goals involved developing written scripts and commentary, which formed the backbone of nearly all the videos. We also created a detailed list of necessary shots for each video to accurately depict the specific issues we aimed to address.

In instances where certain shots could not be captured on our machines, we collaborated with external companies that permitted us to utilize their footage, broadening our resource pool. Once we amassed the video content, we faced the significant challenge of managing the vast amount of material—often hundreds of gigabytes. For effective post-production, we organized the footage into folders labeled with descriptive names, streamlining the sorting process.

The most demanding aspect was producing the live segments of the videos. Since we could not rely solely on pre-recorded commentary, we highlighted key parts in the scripts for live recording, often requiring multiple takes to ensure satisfactory quality. A single error could compromise the video's integrity. Once we selected the best recordings, we saved the remaining footage for future use as a promotional tool, showcasing bloopers and outtakes.

After finalizing the scripts, commentary, and video shots, we proceeded with video editing using appropriate software. Preliminary cuts were made with Clipchamp and Adobe Premiere. This phase was meticulous, as we edited the material slide by slide. For the audio, we employed artificial intelligence software to enhance the background commentary, cloning the voices of our main speakers for clarity.

Upon completing the videos, they underwent a review process, where partners provided evaluations to ensure quality and coherence. Once consensus was reached, the final versions were uploaded to our cloud storage, initiating the next phase of publishing on school websites and social media platforms.

Throughout the project, the most effective strategy was breaking down larger tasks into smaller components and distributing responsibilities among team members. This approach improved our productivity and fostered a collaborative environment conducive to achieving our project objectives.

How did the project partners contribute to the project? Please detail specific contributions made by the partner organisations.

The project partners contributed equally in terms of workload, with each organization responsible for creating three videos. Each partner selected topics that aligned best with their areas of expertise. Mendel University focused on "Introduction to CNC Technology in Woodworking," "Basic Principles of CNC Manufacturing," and "Tooling Part One." Poznan University of Life Sciences covered "Robots in the Wood Industry," "Alternative CNC Technologies for the Wood Industry," and "Drilling CNC Centers." The Technical College in Volyně produced "Tooling Part Two," "CNCs for Timber Constructions," and "Nesting CNCs." Lastly, the Technical University in Zvolen chose to create videos on "Computer Aided Manufacturing Part 1 and 2" and "Maintenance."

Throughout the project, all partners maintained open communication and demonstrated a strong sense of responsibility in fulfilling their roles. Their collaboration was invaluable in planning activities and consulting on methods and software-related challenges. The sharing of certain hardware and software resources further enhanced our collective efforts.

In terms of additional activities, all partners effectively executed their assigned tasks and events. Notably, the Technical University in Zvolen organized an extra event for students, initially planned as an online workshop but transitioned to an in-person format. This shift required significant organization and commitment from the team.

The Secondary Technical School and Higher Vocational School in Volyně emerged as particularly helpful partners, hosting a highly resonant event for students in a conducive environment. Their technical equipment and support during video post-production were exceptional, significantly contributing to the project's success.

Overall, each partner brought valuable technical resources, high-level vocational expertise, and a willingness to go above and beyond for the project's objectives. This collaborative spirit among all partners was crucial in driving the project toward successful outcomes.

How did you communicate and cooperate with your partners? What are the positive and negative elements of the cooperation process? What would you improve if you were to carry out a similar project in the future?

Communication among partners occurred through several channels. The primary medium for formal communication was email, while WhatsApp and video calls facilitated quicker consultations when immediate feedback was necessary. International project meetings served as an excellent informal platform to strengthen relationships, even among partners who had known each other for an extended period.

Cooperation was extensive throughout the project's activities, as highlighted in previous sections. Partners shared software, data (including videos), and occasionally hardware. We actively engaged in discussions regarding student events and handled administrative matters collaboratively.

However, some negative experiences also emerged during the cooperation process. A significant challenge arose from changes in video topics during the initial stages. The Poznan partner faced technical equipment changes, while the Technical University in Zvolen struggled to finalize their topic selection. This uncertainty created confusion, particularly when Zvolen announced their intention to cover CAM topics after other partners had already begun work on them. Fortunately, this was resolved early in the process.

If we were to undertake a similar project in the future, several improvements could enhance our experience. Having the insights we gained from this project would be invaluable. A crucial area requiring attention is the availability of CNC experts; their absence can significantly impact progress, especially if a key team member departs.

Additionally, creating a more detailed partner agreement that specifies tasks and responsibilities would be beneficial. This would help avoid rushing to finalize agreements, allowing for a clearer definition of topics and roles. It is also essential to allocate budget resources for stipends to compensate students for their extra efforts.

Lastly, better estimating the workload associated with post-production activities is critical. The extensive amount of material produced was demanding, and in future projects, we need to be more prudent in planning for post-production efforts.

What target groups were addressed in your activities plan? Were the target groups changed in comparison to the ones identified in the application form?

The target groups identified in the project proposal remained unchanged throughout our activities. The primary focus was on technically oriented schools specializing in wood technologies, particularly those related to CNC (Computer Numerical Control) systems, along with their teachers. Additionally, all students enrolled in these institutions were included as a target group, and we are actively engaging them with our project results.

We have already showcased our videos at the Vocational College in Maribor, where the initiative was well-received. Furthermore, we reached out to several secondary technical schools in the Czech Republic and Slovakia through dissemination activities, including seminars at the Intet conference and workshops during regular project meetings in Zvolen.

Another critical target group consists of companies utilizing CNC technologies and machinery suppliers. These entities can leverage our tutorial videos to train new employees or facilitate the requalification process, especially given the current job market challenges that make it difficult to find candidates with extensive CNC knowledge.

In addition to these established groups, we identified new target audiences, including CNC tooling suppliers and CAD/CAM software providers. To our surprise, we also found strong partnerships with furniture hardware suppliers such as Blum and Kili, who have shown great interest in our activities. These companies are increasingly offering services like online configurators and connected solutions, making our collaboration even more relevant.

We have observed a positive shift among students at the Technical College in Volyně, who are now more educated and experienced with CNC

technologies. This increased competence has made them more confident in applying for jobs that require such expertise.

While students from partner organizations have been the primary focus thus far, they have actively participated in our activities, attended events, and even contributed to the video production process.

If relevant for your project, did you use or do you plan to use Erasmus+ online platforms (e.g. EPALE, European School Education Platform) for the preparation, implementation and/or follow-up of your project? If yes, please describe how.

We have not planned to utilize such platforms thus far, as we lack experience in this area. However, we are open to exploring this option if it facilitates more effective distribution of our results. That said, it is important to note that we, as partners, have numerous partner schools both internationally and locally within our field. Consequently, we currently lack the capacity to implement this quickly. Our priority is to promote our results through the methods outlined in our dissemination plan.

Transnational Project Meetings

Meeting ID	Meeting title	Description of the meeting	Start date	End date	Receiving Organisation	Receiving Country	Receiving City	No. of Participants
TPM2	Regular meeting	<p>Poland, on September 5-7. At this meeting, the main subject of discussion was the unification of the format of all videos and the design style of the videos and cuts, so it was agreed that a common logo and t-shirts for the purpose of filming the videos would be created. Some team members could not attend the project meeting in Poznań, Poland, and therefore it is being considered to organize another project meeting in addition, which will help the teams to better coordinate the creation of video materials, which is desirable in the current state, but the date has not yet been agreed.</p>	05-10-2022	07-10-2022	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	POZNAN	4

TPM1	Kick-off meeting	<p>Transnational project meetings were organized according to plan. The first "kick off" meeting took place on the grounds of the Mendel University in Brno on 31.3.-1.4. 2022. At this project meeting, the possibilities, abilities, and capacities of individual partners were also presented in order to use the strengths of each workplace. Based on the presentations of the technical background of the partners, the main topics and parts of the videos were divided for the individual teams that coordinate the work on the given videos. The next phase of the project was the collection of data and information for the creation of more detailed outlines of individual educational videos. In the fall of 2022, the planned second international project meeting took place at a partner in Poznań</p>	31-03-2022	01-04-2022	MENDELOVA UNIVERZITA V BRNE	Czechia	BRNO SEVER	4
TPM3	Final meeting	<p>The final project meeting, initially planned as a closing meeting, had been postponed due to the extension of the project duration from two to three years. The meeting commenced informally on Monday, September 9th,</p>	09-09-2024	11-09-2024	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	ZVOLEN	6

with a welcoming session for project partners. During this session, partners discussed possibilities for future collaboration on similar activities and the Technical University in Zvolen introduced its proposal for a follow-up project.

The official meeting took place the following day, Tuesday, September 10th. All project partners presented the current status of their project activities, including the videos produced. The subsequent school tour focused particularly on robotics and included a presentation outlining plans to organize a robotics course for students. Further discussions covered the remaining project activities, notably the upcoming workshop, preparations for the final report, and the collection of all necessary documents and reports required to properly conclude the project.

The meeting concluded with an excursion to an interactive museum in Banská

Štíavnica, which utilizes advanced technologies such as virtual reality and artificial intelligence—key technologies that play an important role in the project's focus.

14

Project Results

This table reflects the information entered in Beneficiary Module. If you would like to change it please do it in the corresponding Beneficiary Module section. The information presented here will be automatically refreshed after that.

Result Identification	R1
Result Title	Tutorial videos
Result Type	Open / online / digital education – Other
Description	<p>The project successfully produced a series of 12 instructional videos focused on practical procedures in CNC woodworking. These videos serve as essential resources for enhancing both theoretical and practical learning, providing students with step-by-step demonstrations of CNC operations.</p> <p>Originally piloted at MENDELU, the concept of using workshop-based videos proved successful, with positive feedback from students. The videos are designed to address the outdated nature of existing teaching materials and improve the quality of practical skills among graduates.</p> <p>While we initially planned to include subtitles in multiple languages, technical challenges led us to release the videos in English only. However, AI tools can easily generate subtitles, ensuring accessibility for non-English speakers.</p> <p>By incorporating input from educators actively working with CNC machines, the videos offer students exclusive insights into industry practices. The project also aimed to integrate elements of Industry 4.0, including augmented reality, to further enhance the learning experience.</p> <p>These instructional videos are available on our YouTube channel and partner websites, providing open access to modern digital teaching materials. This collaborative effort among partner institutions ensures that students across Central Europe gain comprehensive knowledge of CNC woodworking technologies, regardless of external challenges.</p>
Start date	31-03-2022
End date	30-01-2024
Available Languages	English
Available Medias	Video
Leading Organisation	MENDELOVA UNIVERZITA V BRNE
Participating Organisations	TECHNICKA UNIVERZITA VO ZVOLENE, Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslova 440, UNIWERSYTET PRZYRODNICZY W POZNANIU

Multiplier Events

This table reflects the information entered in Beneficiary Module. If you would like to change it please do it in the corresponding Beneficiary Module section. The information presented here will be automatically refreshed after that.

Event Identification	E1
Event Title	Workshop on CNC technology education
Description of the multiplier event	The workshop in Zvolen was an international event designed to showcase the project's outputs, with a focus on advancements in CNC technologies. It featured live demonstrations of CNC equipment and methods, providing attendees with hands-on insights into cutting-edge practices. The workshop attracted educators, industry professionals, and students, fostering a collaborative environment to explore innovative teaching methods. Discussions centered on future collaborations and integrating modern technologies into education, strengthening ties between the academic and industrial sectors to enhance learning outcomes and skill development.
Country of Venue	Slovakia
Start date	21-10-2024
End date	23-10-2024
Project Results Covered (using Result Identification number)	R1
Leading Organisation	TECHNICKA UNIVERZITA VO ZVOLENE
Participating Organisations	

Learning/Teaching/Training Activities

This table reflects the information entered in Beneficiary Module. If you would like to change it please do it in the corresponding Beneficiary Module section. The information presented here will be automatically refreshed after that.

Activity No.	A2
Field	Higher Education
Activity type	Learning, Teaching, Training Activities
Description of the activity	The Intensive Course on Robotics in Zvolen was an additional program funded by surplus project funds, resulting from the inability to pay students at PULS and MENDELU the full calculated budget, and instead covering only actual costs. This comprehensive course aimed at deepening participants' understanding of robotics within the woodworking industry featured both theoretical lectures and practical sessions with robotic and cobotic arms. Attendees included students and educators from partner institutions, who explored the integration of robotics into modern manufacturing processes. The course facilitated knowledge exchange and inspired innovative approaches to incorporating robotics into educational curricula, strengthening participants' skills and preparing them for future technological advancements.
Country of Venue	Slovakia
No. of Participants	61
Participants with Fewer Opportunities (out of total number of Participants)	0
Accompanying Persons (out of total number of Participants)	0
Is this a long-term activity?	false
Funded Duration (days)	102
Participating Organisations	TECHNICKA UNIVERZITA VO ZVOLENE, MENDELOVA UNIVERZITA V BRNE, Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440, UNIWERSYTET PRZYRODNICZY W POZNANIU
Activity No.	A1
Field	Higher Education
Activity type	Learning, Teaching, Training Activities
Description of the activity	The Intensive Course on CNC Manufacturing in Volyně focused on developing both theoretical and practical skills in CNC woodworking machines. The course featured expert lectures conducted in English, practical training in CAM production preparation, and the subsequent production of programmed parts. Participants also visited companies equipped with the latest CNC technologies. As outlined in the project proposal, education in CNC technology, which is experiencing significant growth, is often outdated concerning teaching materials and educators' approaches. Due to its complexity, it is a challenging subject, reflected in the low quality of practical skills among graduates in woodworking disciplines. This event aimed to demonstrate to students that CNC production is not only the future of their field but also more accessible than it might initially seem. By involving all project partners, the course enhanced awareness of teaching approaches across partner organizations. Popularization videos were also created to further disseminate knowledge. Originally conceived as a competition, the format was changed to an intensive course due to the varying CAD/CAM software used by each partner, ensuring a more equitable and comprehensive learning experience.
Country of Venue	Czechia
No. of Participants	20
Participants with Fewer Opportunities (out of total number of Participants)	0
Accompanying Persons (out of total number of Participants)	5
Is this a long-term activity?	false
Funded Duration (days)	73
Participating Organisations	TECHNICKA UNIVERZITA VO ZVOLENE, MENDELOVA UNIVERZITA V BRNE, Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440, UNIWERSYTET PRZYRODNICZY W POZNANIU

Participants in Learning/Teaching/Training Activities

Participants' Profile

For each activity, please describe the background and profile of the participants involved in the learning, teaching or training activities. How were the participants selected, prepared and supported? If relevant, please describe any practical arrangement set for the participants, including training, teaching or learning agreements.

The first activity was held at the Higher Vocational College in Volyně. Initially planned as a competition, it was changed to an "Intensive Course on Woodworking Technologies" to ensure fairness due to varying equipment levels among partner institutions. This decision, agreed upon by all partners, was well-received by students.

Participants included students from three partner universities, each selecting four students, along with local technical college students who adjusted their schedules to join. Selection required a CNC technology background and English proficiency, verified through interviews. The voluntary process did not require further selection based on academic performance.

Each university sent two mentors to support students and contribute to theoretical sessions. The course included theoretical sessions on CNC manufacturing principles, practical CAD/CAM software training, hands-on machine work, and factory excursions showcasing state-of-the-art CNC technologies. Students concluded with presentations about their institutions' CNC equipment, ensuring a comprehensive learning experience. The participants were honored by certificate of attendance signed by headmaster of Vocational college in Volyně.

The second activity took place at the Technical University in Zvolen, focusing on Robotics. The selection process mirrored the previous activity, involving only the three partner universities, as Volyně students faced capacity and funding constraints. This activity was funded from leftover resources and featured theoretical lectures from academia and industry.

Practical sessions provided hands-on experience with robotic and cobotic arms, while excursions to factories demonstrated Robotics and Industry 4.0 solutions. This comprehensive approach equipped students with valuable skills in robotics and real-world applications.

Collectively, these activities offered an enriching educational experience, fostering both theoretical understanding and practical skills in woodworking technologies and robotics. The integration of expert lectures, practical training, and industry excursions successfully deepened participants' appreciation and knowledge of advanced technological processes.

Participants' Recognition

Did your project make use of European instruments like Europass, ECVET, Youthpass, ECTS etc. or any national instruments/certificates for recognition or validation of the learning outcomes of the participants in the learning, teaching or training activities?

NO

If you have used other recognition/validation instruments, please describe them:

Follow-up

The following question represents your feedback to the European Commission about application, implementation and reporting procedures for your Erasmus+ project. When answering this question, please take into account the opinion of organisations involved in your project.

Do you consider that the procedures applicable to your project were proportionate and simple?

YES

The following questions should be addressed taking into account effects on the coordinator organisation and partner organisations (including associated partners, if any).

Do you consider that your organisations have developed high-quality practices as a result of their participation in Erasmus+ Key Action 2?

YES

Please provide more information about your reply: what type of high-quality practices you developed or did not manage to develop? Why?

During the project, we successfully developed high-quality educational tools for CNC technologies in woodworking—a field where such resources are notably scarce. Existing educational materials predominantly focus on CNCs for machinery, leaving a gap in the woodworking sector. Our comprehensive materials fill this void, providing essential coverage for a vital and promising field.

The use of video formats enhances the learning experience, aligning with current student preferences and engagement styles. Videos are particularly effective in conveying complex concepts in a more relatable and accessible manner for today's students.

Additionally, we established a network of CNC experts across Central Europe, fostering closer collaboration and facilitating student exchanges between partner organizations. This unified educational approach has significantly advanced practical education in CAD/CAM systems and hands-on CNC machine work, elevating the quality of student projects to levels rarely seen in the regions of our partners.

However, challenges remain. A key issue is the limited interest from some colleagues at the involved institutions. Despite efforts to motivate them through

project involvement, resistance to adopting new technologies persists among some vocational subject teachers. This reluctance is problematic, as it hinders progress in a field that urgently needs more experts.

Overall, while significant strides have been made, ongoing efforts are necessary to fully integrate these high-quality practices and overcome existing barriers to innovation in vocational education.

Impact

What was the project's impact on the participants, participating organisations, target groups and other relevant stakeholders?

The project's impact has been significant across participants, organizations, target groups, and stakeholders. A notable effect has been the increased interest in CNC technologies at all partner institutions, stemming not just from the project outcomes but from the involvement in learning and teaching activities. This heightened enthusiasm is evident as more students express a desire to utilize CNC for their projects, prompting vocational teaching staff to rethink their educational approaches. There is a shift from traditional theory and simple construction drawing to 3D construction modeling, aligning with industry trends in product design, furniture manufacturing, and timber-based constructions.

This student-driven demand encourages educators to voluntarily update their teaching methods. Additionally, there is substantial interest from students in pursuing further education in CAD modeling and CAM programming, even beyond regular school hours. They recognize the necessity of these skills for precision and efficiency in CNC manufacturing. For instance, at Mendel University, enrollment in the optional subject "CNC Technology and Automation" surged from 24 students in the academic year 2023/24 to 58 in 2024/25. Previously, this subject was mandatory, so earlier comparisons aren't available. Meanwhile, the Technical College in Volyně introduced a new subject focused on CNC technology in response to high student demand.

Overall interest in CNC technologies is growing at all institutions, and while the full impact of the project results will be measurable in the coming years, the project's presence has already made a significant impression.

Further impact was observed among the project team members, who had to learn new approaches and insights about CNC technology from each other. This exchange fostered innovative thinking and the development of new educational methods. Recognition of team members among colleagues and students within their institutions has grown, helping to make the field more attractive to new educators, who are desperately needed.

Additionally, the project facilitated new partnerships with companies in related fields, such as CNC tooling, machine suppliers, CAD/CAM solutions, and hardware for furniture suppliers, including notable names like Blum and Kili. These collaborations promise to enhance educational and practical opportunities for students and institutions alike.

What was the impact of the project at the local, regional, European and/or international levels? Please provide qualitative and quantitative indicators.

At the regional level, the project significantly enhanced the preparation of students for future employment by addressing the inadequate educational tools and technical knowledge in CAD/CAM and CNC manufacturing for woodworking. This improvement is crucial, as the lack of skilled graduates reduces the productivity and competitiveness of local companies. By showcasing modern advancements in woodworking, the project also helps shift public perception, potentially increasing the field's attractiveness.

For example, the Technical College in Volyně, a prominent regional institution, relies heavily on local students due to its small-town location, which can be limiting. As competition increases, particularly with the rise of broad, non-technical study programs, maintaining a robust technical education is essential for regional and national economies that depend on industrial sectors as a major part of their GDP.

Quantitatively measuring the project's impact is premature, as changes in education quality and field attractiveness are gradual. However, the perception of technically oriented schools is shifting. These institutions, once seen as outdated, are now attracting younger educators due to improved recognition and competitive salaries, partly influenced by the project's impact. This shift is vital, especially as AI technologies redefine professions, underscoring the importance of technical education.

A key quantitative indicator is the increased enrollment in CNC-related subjects. At Mendel University, enrollment in "CNC Technology and Automation" surged from 24 students in 2023/24 to 58 in 2024/25. Similarly, the Higher Vocational School in Volyně saw growth from 28 and 30 students in 2022/23 and 2023/24, respectively, to 46 students in 2024/25 after introducing a CNC-focused subject. While it's difficult to attribute this entirely to the project, demographic changes and other factors also contribute.

At the European level, the project enhances the visibility, quality, and recognition of the involved institutions. It motivates other departments to pursue similar initiatives, though concrete indicators will become more apparent in the coming years. The project's alignment with evolving industry needs suggests its long-term relevance and potential to inspire further educational innovation.

How did the project contribute to the achievement of the most relevant priorities as indicated in the description section?

Digital Content, Technologies, and Practices: The project developed comprehensive digital educational tools for CNC technologies in woodworking, an area previously lacking in resources. The creation of video-based materials, aligned with regular teaching presentations and content, ensured consistency and accessibility. This approach not only enhanced learning experiences but also facilitated the integration of digital technologies into traditional educational settings, making the content more engaging for students.

New Learning and Teaching Methods and Approaches: By shifting the focus from traditional methods to 3D construction modeling and practical CAD/CAM applications, the project introduced innovative teaching strategies. This encouraged educators to rethink their approaches and fostered a more interactive and hands-on learning environment. The project also unified teaching content across all partners, enabling easier student and staff exchanges. This standardization supported collaboration and enriched educational experiences by allowing shared expertise and resources.

Promotion of Alternative Forms of Participation: The project promoted alternative participation by facilitating student exchanges and interactions across partner institutions. This collaboration allowed students to engage with diverse perspectives and practices, enriching their educational journey. Additionally, the focus on student-driven demand for new courses and practical skills encouraged active participation and engagement in their learning.

Overall, the project successfully addressed these priorities by integrating digital advancements, fostering innovative educational methods, and encouraging active student involvement. The standardization of teaching content across partners further enhanced the educational landscape, promoting seamless exchanges and collaboration in the field of CNC technologies.

Dissemination and Use of Project Results

To whom did you disseminate the project results inside and outside your partnership? Please define in particular your targeted audience(s) at local/regional/national/EU level/international and explain your choices.

Inside the partnership, project results were disseminated to students voluntarily involved in the project and those participating in the learning and teaching activities, as well as colleagues from the teaching staff. Local educators also target students by using the videos for educational purposes. Additionally, educators from other departments were targeted to inspire them to innovate their subjects by applying for similar projects.

Outside the partnership, our focus was on secondary schools and their students and educators with a technical orientation in the woodworking industry, along with similar vocational colleges. These institutions can utilize the project results for educational enhancement.

The motivation for targeting these stakeholders is to encourage educators to think creatively and innovate their teaching methods. For students, the aim is to demonstrate that some institutions are advancing teaching with modern technologies, creating natural pressure on educators to effectively use modern equipment. This also pressures schools to modernize teaching tools and update IT technology.

An important target group is companies that can use our results for training new employees. This aspect is crucial as it enhances the visibility of all partners, encouraging companies to collaborate on research and development projects, support student activities, and engage in common events and seminars. Such collaborations help elevate the overall quality of the woodworking field. For instance, our partnership with Blum provides consultation services and hardware support for student projects.

At the EU level, these efforts increase the visibility and reputation of all partners, opening opportunities to attract more foreign students and expand exchange partnerships, which we are already observing.

What kind of dissemination activities did your partnership carry out and through which channels? Please also provide information on the feedback received.

The partnership carried out various dissemination activities through multiple channels to promote the project results. Rollup posters were displayed in corridors, and project information with links to the results was featured on each partner's website. Each partner introduced the project within their faculties or departments at the project's inception.

There are plans to introduce video results during special sessions with the international departments of each partner university. The Technical College in Volyně will host a special event for educators. Although these events were not feasible during the project, we are motivated to conduct them to showcase our work and inspire colleagues to pursue similar projects focused on enhancing teaching methods.

Our primary dissemination channel has been our Instagram account, CNCwoodfans, where we publish reels and short stories. As the project results are finalized, we plan to increase our social media activity with weekly videos.

During a Blended Intensive Program in Maribor, Slovenia, the project was introduced to attendees from European colleges in Romania, Italy, Greece, and Lithuania. This led to the Technical College in Volyně participating in interconnected programs focused on Design and CNC manufacturing, starting in Italy in February 2025 and continuing in Maribor and Kaunas.

An additional activity was a workshop in Zvolen, though attendance from secondary schools was limited. However, stakeholders from CAD/CAM software suppliers and industry were present.

The project was also introduced at the International Conference Chip and Chipless, hosted by the Technical University in Zvolen, and at the INTET seminar hosted by the Technical College in Volyně, attended by university and high school students and industry professionals.

Lastly, at the Ligna Bohemia exposition in Lysá nad Labem, we presented our activities at Panas Ltd., a leading CNC machinery supplier.

Feedback has been positive among students, colleagues, and external institutions, with confirmed interest in using the videos for educational purposes. Increased cooperation with companies is a direct result of the project, showcasing our partners' capacity for innovative approaches. An example is the collaboration between the Technical College in Volyně and companies HON a.s., Julius Blum GmbH, and Kili s.r.o. to create a CNC-manufactured test kitchen, which began thanks to this project.

Erasmus+ promotes an open access requirement for all materials produced through its projects. In case your project has produced intellectual outputs/tangible deliverables, please describe if and how you have promoted free access to them by the public. In case a limitation was imposed for the use of the open licence, please specify the reasons, extent and nature of this limitation.

In alignment with the Erasmus+ open access requirement, our project is committed to providing free access to all produced intellectual outputs and tangible deliverables. We recognize the importance of sharing resources to enhance educational practices and promote innovation across institutions.

The primary deliverables of our project include comprehensive digital educational materials focused on CNC technologies in woodworking. These resources were developed to address the lack of existing tools in this area, and they are designed to be accessible and engaging for students and educators alike. The materials, particularly in video format, align with modern educational practices and cater to the preferences of today's learners.

All project outputs will be made publicly available through various channels to ensure broad accessibility. Each partner institution has integrated links to these resources on their respective websites, allowing easy access for local, regional, and international audiences. This approach ensures that educators and students worldwide can benefit from our project's findings and materials.

We have also leveraged social media to disseminate our outputs. Our Instagram account, CNCwoodfans, plays a crucial role in reaching a wider audience, where we share reels and short stories related to the project. As we continue to enhance our resources, we plan to expand our social media

activity, providing weekly updates and videos to keep our audience engaged and informed. Additionally, the videos will be available on our dedicated YouTube channel, further increasing accessibility and reach.

There are no limitations imposed on the public access to our outputs. We are committed to ensuring that all materials are freely accessible, in line with the open license principles of Erasmus+. This openness not only facilitates widespread adoption and adaptation of our materials but also encourages collaboration and innovation among educators and institutions.

The project's commitment to open access aligns with our broader goals of promoting modern teaching methods, enhancing technical education, and fostering international cooperation. By making our outputs freely available, we hope to inspire other educators and institutions to innovate and improve their teaching practices, ultimately contributing to the advancement of education in CNC technologies and beyond.

<https://ldf.mendelu.cz/erasmus-2/>
<https://www.evolyne.cz/web/granty-a-projekty>
<https://www.instagram.com/cncwoodfans/>
<https://www.youtube.com/@Robodig>

How have you ensured that the project's results will remain available and be used by others?

To ensure the project's results remain available and are utilized by others, we have implemented several strategies focused on accessibility, sustainability, and continued engagement.

Digital Accessibility: All project outputs, including comprehensive digital educational materials on CNC technologies, are hosted on partner websites. This ensures easy and ongoing access for educators and students locally, regionally, and internationally. By maintaining these resources online, we provide a reliable repository that can be accessed anytime.

Social Media and YouTube Channel: We actively use our Instagram account, CNCwoodfans, to share project updates, reels, and short stories. This platform helps us reach a broader audience and keep them engaged with regular content. Additionally, all video materials are available on our dedicated YouTube channel, maximizing reach and ensuring that our resources remain accessible over the long term.

Integration into Curricula: Partner institutions have integrated the project materials into their curricula, ensuring that they become a lasting part of educational programs. By embedding these resources into teaching practices, we promote their continued use and relevance.

Collaborative Networks: We have established strong connections with other educational institutions and industry partners, such as Blum and Kili. These relationships encourage the ongoing exchange of knowledge and resources, fostering an environment where the project's results are continually applied and adapted.

Open Licensing: By adhering to Erasmus+ open access principles, we ensure that all materials are freely available without restrictions. This openness encourages widespread use and adaptation, allowing others to build upon our work.

Through these measures, we are confident that the project's results will remain a valuable resource for educators and institutions, promoting innovation and enhancing education in CNC technologies well into the future.

How did you see the potential to use this project's approach in other projects on a larger scale and/or in a different field or area?

The project's approach demonstrates significant potential for application on a larger scale and in different fields. The development and dissemination of comprehensive digital educational materials, particularly in under-resourced areas like CNC technologies for woodworking, provide a robust model that can be adapted to other disciplines.

Scalability: The integration of digital tools, such as video-based materials and online platforms, offers a scalable solution that can be applied to various technical and non-technical fields. By leveraging digital content, educational institutions can enhance engagement and accessibility, reaching broader audiences worldwide.

Interdisciplinary Application: The project's focus on innovative teaching methods and collaboration among educators can be extended to other fields, such as AI, automation, and emerging technologies. These approaches encourage educators to adopt new methodologies, fostering creativity and adaptability in diverse educational contexts.

Cross-Disciplinary Collaboration: By establishing networks of experts and fostering partnerships, the project's model encourages cross-disciplinary collaboration. This can lead to the development of integrated educational programs that address complex, real-world challenges and enhance the skills of students across multiple sectors.

Sustainability and Innovation: The emphasis on sustainable development of educational tools ensures that resources remain relevant and effective amid evolving technological landscapes. This approach can be applied to other areas, promoting continuous improvement and innovation in educational practices.

Overall, the project's approach provides a flexible and effective framework that can be adapted to larger-scale initiatives and diverse fields, enhancing educational quality and fostering innovation across disciplines.

Sustainability

What are the activities and results that will be maintained after the end of the EU funding, and how will you ensure the resources needed to sustain them?
After the end of EU funding, several activities and results from the project will be maintained to ensure ongoing impact and sustainability. Our dedicated team is committed to continuing and expanding these activities, recognizing the importance of sustainable long-term development.

Continued Use of Educational Materials: The digital educational materials on CNC technologies will remain accessible through partner websites and our YouTube channel. These resources will continue to be integrated into curricula, ensuring their lasting presence in educational programs.

Ongoing Engagement through Social Media: We will maintain and expand our presence on platforms like Instagram and YouTube, regularly updating content to keep the audience engaged and informed. This continued engagement will help sustain interest and utilization of the project materials.

Sustainable Development of Educational Tools: We are committed to the sustainable development of educational tools, ensuring they evolve with technological advancements and educational needs. By updating and refining these tools, we aim to provide relevant and cutting-edge resources for educators and students.

Strengthening Collaborative Networks: Our partnerships with educational institutions will be strengthened to facilitate ongoing collaboration, resource sharing, and application of the project's results in real-world contexts.

Pursuing Future Projects: We are encouraged by the success of this project and are eager to apply for further projects focused on AI and automation technologies. These initiatives will build on our current work, expanding our impact and relevance in emerging technological fields.

Seeking Additional Funding and Support: To sustain these activities, we will explore various funding opportunities, including grants and partnerships, to secure the necessary resources. Our commitment to innovation and education will drive efforts to obtain support for continued activities.

By leveraging our achievements and maintaining a strong network of partners, we are confident in our ability to sustain and grow the project's impact, contributing to the advancement of CNC technologies, AI, and automation in education.

European Language Label

The European Language Label is an award set up by the European Commission as part of the Erasmus+ programme. Its objectives are to recognise excellent projects in the area of multilingualism, to help sharing their results, and to promote public interest in language learning.

European Language Labels are awarded in each EU member state and in third countries associated to Erasmus+. The labels are awarded either on annual or biannual basis, depending on the country. You can learn more about the European Language Label on the Europa web, [here](#):

European language initiatives

Thanks to having completed a Key Action 2 cooperation partnership project, your organisation has the opportunity to apply for the European Language Label.

Please note that applying for the European Language Label will not influence the evaluation of your final report in any way. All the information provided in replies to questions in this section will be used exclusively in the selection procedures for the European Language Label.

Would you like to apply for the European Language Label?

YES

Your application for the European Language Label will be assessed based on three award principles: 'Thematic priorities', 'Comprehensive and creative approach', and 'Impact and dissemination'. To apply, please read the award principles below and reply to the corresponding questions.

1. Award principle 'Thematic priorities'

The implemented initiatives will be given priority in the selection if they address one or more of the thematic priorities defined for the given selection round. European thematic priorities will be defined at the European level and applicable to all Programme countries. The European priorities can be complemented with further national priorities decided by the National Agency and the National Authority. Please consult the list of European and national thematic priorities (if any) on the website of your National Agency. If you are not sure that your project addresses the required thematic priorities, please ask your National Agency for advice.

How did your project address the European Language Label thematic priorities?

Our project effectively addressed several European Language Label thematic priorities by integrating language learning within the technical education framework of CNC woodworking.

Multilingualism and Intercultural Understanding: By using English as the primary language for instructional videos and activities, we enhanced students' language skills in a real-world context. This approach promoted multilingualism and prepared students to engage in a global workforce, fostering intercultural understanding and communication.

Innovative Teaching Methods: The project employed digital media and practical applications to create engaging learning experiences. Instructional videos combined theoretical knowledge with real CNC operations, providing immersive content that resonated with learners. This innovative method demonstrated how language learning could be seamlessly integrated with technical education.

Digital Competence: By utilizing platforms like YouTube and Instagram, the project capitalized on digital tools to reach a broader audience. This approach not only improved accessibility but also encouraged students to interact with content in a digital environment, enhancing both language and technical competencies.

Vocational Education and Training (VET): The project specifically targeted vocational learners, addressing the priority of improving language skills within VET. By linking language learning with practical CNC skills, students gained valuable expertise applicable to their future careers, making language acquisition relevant and purposeful.

Collaboration and Partnerships: The project fostered collaboration among partner institutions across different countries, using English as the lingua franca. This encouraged cross-cultural exchanges and the sharing of best practices, further reinforcing language learning as a tool for international cooperation.

Sustainability and Lifelong Learning: By creating open-access resources and integrating language learning into technical education, the project promoted sustainable learning practices. These resources will continue to support lifelong learning, allowing students and educators to adapt to evolving industry needs and language requirements.

Overall, the project aligned with and advanced the European Language Label thematic priorities, demonstrating a comprehensive approach to language learning that is both innovative and impactful.

2. Award principle 'Comprehensive and creative approach'

The assessment of criteria for 'Comprehensive and creative approach' is based on the extent to which:

- All elements involved – learners, teachers, methods and materials – contribute to ensuring that the needs of the learners are identified and met, including validation of language skills.
- Creative use is being made of all resources available to stimulate language learning from an early age.
- The implemented initiatives explore previously unknown approaches, appropriate to the learners concerned.
- The implemented initiatives are based upon the reality of the European Union and its linguistic diversity and use the potential which that offers (for example, contacts across national borders, language learning between the neighbouring countries, developing bilingual teaching options etc.) to improve understanding of other cultures by means of language learning.

To address the above requirements, please reply to the following questions:

How was your project comprehensive in terms of language learning and teaching?

The project was comprehensive in addressing language learning and teaching, primarily through the creation and dissemination of instructional videos in English. By choosing English as the primary language, we ensured that the materials could reach a broad international audience, promoting inclusivity and accessibility across different regions.

The expert lectures and video content were conducted and narrated in English, providing students with the opportunity to improve their language skills in a technical context. This approach not only supported the acquisition of CNC woodworking knowledge but also enhanced participants' proficiency in technical English, a valuable skill in the global job market.

Furthermore, the project encouraged collaboration among educators and students from various countries, fostering an environment where English served as the common language of communication. This interaction promoted language practice and cultural exchange, enriching the learning experience for all participants.

Although we initially planned to include subtitles in multiple languages, the use of English-only videos was mitigated by the availability of AI tools that can generate subtitles, making the content more accessible to non-English speakers.

Overall, the project effectively integrated language learning into its framework, providing participants with the skills needed to engage with international resources and collaborate across borders.

How did your project use available resources in a creative way to stimulate language learning from an early age?

The project creatively utilized available resources to stimulate language learning from an early age by integrating English-language content into its instructional videos on CNC woodworking. By presenting technical concepts in English, the project encouraged younger students to engage with language learning in a practical and relevant context.

The use of video as a medium was particularly effective, as it aligns with the digital habits of younger audiences. These videos provided an immersive experience, allowing students to hear technical English in action, which helped reinforce language acquisition alongside technical skills.

Moreover, the project fostered collaboration and interaction among participants from diverse backgrounds. This exposure to English as a common language facilitated early language practice, encouraging students to communicate and collaborate effectively with peers from different regions.

By leveraging digital platforms like YouTube and social media, the project extended its reach to younger audiences, offering accessible and engaging content that combined language learning with technical education. This innovative approach ensured that language skills were developed naturally, as students interacted with the material and participated in discussions, laying a strong foundation for future language proficiency.

How did your project explore innovative, previously unknown approaches appropriate for the learners in the target group?

The project explored innovative approaches by integrating cutting-edge digital media and real-world applications tailored for learners in CNC woodworking. Key innovations included the development of instructional videos that combined practical demonstrations with theoretical insights, using a format that resonated with the digital habits of the target group.

These videos featured real CNC machine operations and expert commentary, providing learners with an authentic, immersive experience. By involving students in the video production process, the project encouraged active participation, fostering a sense of ownership and engagement.

Additionally, the project utilized social media platforms like Instagram to share short, engaging content, reaching learners in their preferred digital environments. This approach not only made learning more accessible but also created a community of practice where students could share insights and collaborate.

By leveraging these innovative strategies, the project effectively addressed the needs and preferences of the target group, providing a modern, dynamic learning experience.

How did your project use linguistic diversity to improve understanding of other cultures by means of language learning?

The project utilized linguistic diversity to enhance cultural understanding by conducting activities and creating materials in English, the common language among participants from various countries. This approach facilitated communication and collaboration, allowing participants to share diverse perspectives and cultural insights.

Through joint activities, such as international meetings and collaborative video production, participants were exposed to different cultural contexts and practices. This interaction fostered an appreciation for linguistic diversity and encouraged learners to engage with different cultures through language.

By emphasizing the use of English in technical contexts, the project helped participants develop language skills that are essential for global communication, promoting cross-cultural understanding and cooperation.

3. Award principle 'Impact and dissemination'

The assessment of criteria for 'Impact and dissemination' is based on the extent to which the project results have the potential to:

- Increase the motivation of learners and teachers and help develop positive attitudes towards linguistic diversity.
- Represent a source of inspiration for others in different countries and contexts, or be transferred to other groups or fields. They might, for example, be adaptable to the learning of other languages or to learning by different age groups than those originally involved. It could also include digital online tools for language learning.
- Lead to a quantitative or qualitative improvement in the teaching and learning of languages in its local or national context. In quantitative terms, this might mean involving several languages, and particularly those which are less widely used. In qualitative terms, it might mean the use of a better methodology than before.

To address the above requirements, please reply to the following questions:

How does your project help increase the motivation learners and teachers, or develop positive attitudes towards language learning and linguistic diversity?

The project increased motivation among learners and teachers by integrating language learning with practical, engaging content in CNC woodworking. By using English as the medium for instructional videos and expert lectures, participants saw the immediate relevance and value of language skills in a global context.

For learners, the connection between language and real-world applications in CNC technology sparked interest and demonstrated the practical benefits of language proficiency. Involving students in video production further motivated them by providing a sense of ownership and real-world experience.

Teachers were encouraged to adopt innovative teaching methods, seeing firsthand how language learning could be seamlessly integrated with technical education. This approach fostered a positive attitude towards linguistic diversity, as language became a tool for collaboration and exchange across cultures.

Overall, the project highlighted the importance of language skills, not only for academic success but also for professional growth, thereby promoting a positive attitude towards language learning and cultural appreciation.

How can your project be a source of inspiration for others? How can its approach be transferred for use with other target groups or in other fields?

The project serves as a source of inspiration by demonstrating how digital media and practical applications can enhance learning experiences across various fields. By integrating instructional videos with real-world CNC operations, the project showcases the effectiveness of using engaging, relatable content to teach complex subjects.

This approach can be transferred to other target groups or fields by adapting the format to suit different technical areas, such as robotics, electronics, or even non-technical subjects. The key is to focus on creating practical, immersive experiences that relate directly to learners' interests and industry needs.

The use of social media to disseminate content and build a learning community can also be applied across disciplines, fostering engagement and collaboration. By emphasizing language skills in technical contexts, the project's approach promotes global communication and cultural understanding, making it applicable to diverse educational settings.

Overall, the project's innovative combination of digital tools, practical learning, and language integration can inspire educators to rethink traditional methods and adopt strategies that resonate with modern learners.

Did your project lead to a quantitative or qualitative improvement in the teaching and learning of languages in your local or national context? If yes, please explain how.

Yes, the project led to both quantitative and qualitative improvements in language teaching and learning in our context.

Quantitative Improvement: The project's focus on using English in instructional videos and activities increased students' exposure to the language, resulting in improved proficiency. This was reflected in higher enrollment and participation rates in language-related technical courses, as students

recognized the value of language skills in accessing global resources and opportunities.

Qualitative Improvement: By integrating English into practical, real-world applications in CNC woodworking, the project enhanced students' engagement and motivation. This approach demonstrated the relevance of language skills beyond traditional classroom settings, fostering a more positive attitude towards language learning. Teachers also adopted more innovative methods, incorporating language into technical education seamlessly, which improved overall teaching quality.

Overall, the project enriched language learning by linking it with practical skills, making it more appealing and effective for students.

By applying for the European Language Label, I am submitting this final report as part of my application and I agree for it to be processed in accordance with the rules of European Language Label competition, as published by the relevant National Agency.

Yes

Budget

This section gives a detailed overview of the final amount of the EU grant you request;

Budget summary

OID of the Organisation	Name of the Organisation	Country of the Organisation	Project Management and Implementation	Transnational Project Meetings	Project Results	Multiplier Events	Learning/Teaching/Training Activities				Inclusion support for participants	Inclusion Support for organisation	Exceptional Costs	Exceptional Costs - Guarantee	Total (Calculated)
							Travel	Individual Support	Linguistic support	Exceptional Costs for Expensive Travel					
E10205924	MENDE LOVA UNIVERZITA V BRNE	Czechia	12 000€	1 725€	22 819€	0€	720€	840€	0€	0€	0€	0€	0€	0€	38 104€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	6 000€	1 725€	11 800€	0€	900€	1 158€	0€	0€	0€	0€	0€	0€	21 583€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	6 000€	2 300€	23 463€	0€	0€	0€	0€	0€	0€	0€	0€	0€	31 763€
E10208976	UNIWE RSYTET PRZYRODNICZY W POZNAIU	Poland	5 978€	2 300€	11 965€	0€	1 080€	1 650€	0€	0€	0€	0€	0€	0€	22 973€
			29 978€	8 050€	70 047€	0€	2 700€	3 648€	0€	0€	0€	0€	0€	0€	114 423€

Project total amount

Project Total Amount Reported (Calculated) 114 423,00

Please provide any further comments you may have concerning the above figure.

The project expenditures remained within the automatically calculated budget limits set in the original application. Minor reallocations between budget categories were made, fully respecting the funding provider's guidelines.

The main adjustments resulted from differences between EU-defined unit-cost tariffs (especially salaries and travel) and actual institutional accounting practices. Internal payroll regulations restricted direct adherence to EU tariffs, necessitating alternative use of leftover funds. These savings enabled additional activities, notably an extra Learning and Teaching event in Zvolen, allowing participation of five more students from Mendel University (Brno) and four additional students from Poznan University of Life Sciences. Furthermore, funds allowed organizing an additional Multiplier Event in Zvolen, originally planned virtually.

Due to significantly increased time and effort spent producing educational videos (project outputs), remaining funds from "Learning and Teaching Activities" and "Project Meetings" were shifted to the "Project Results (Outputs)" category. However, the allocated project budget was still insufficient to cover all video production costs, requiring supplementary funding from external institutional sources. Additional software not initially budgeted was also covered externally.

Mendel University officially recorded co-funding of 2,152 EUR for personnel expenses (teachers, trainers, researchers). To comply with internal accounting regulations of all partners, we requested a reduced amount in the "Project Management" category.

Project Management and Implementation

OID of the Organisation	Role of the Organisation	Name of the Organisation	Country of the Organisation	Total
E10208976	Partner Organisation	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	5 978€
E10200883	Partner Organisation	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	6 000€
E10205924	Applicant Organisation	MENDELOVA UNIVERZITA V BRNE	Czechia	12 000€
E10095133	Partner Organisation	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	6 000€
				29 978€

Transnational Project Meetings

OID of the Organisation	Name of the Organisation	Country of the Organisation	Total No. of Meetings	Total No. of Participants in All Meetings	Distance Band	Grant per participant	Total (Calculated)
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	2	3	100 - 1999 km	575	1 725€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	2	3	100 - 1999 km	575	1 725€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	3	4	100 - 1999 km	575	2 300€
E10208976	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	2	4	100 - 1999 km	575	2 300€
							8 050€

Project Results

OID of the Organisation	Name of the Organisation	Country of the Organisation	Result Identification	Category of Staff	No. of Working Days	Grant per Day	Total (Calculated)
-------------------------	--------------------------	-----------------------------	-----------------------	-------------------	---------------------	---------------	--------------------

E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	R1	Administrative support staff	0	78	0€
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	R1	Youth Workers	0	137	0€
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	R1	Managers	0	164	0€
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	R1	Teachers/Trainers /Researchers	107	137	14 659€
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	R1	Technicians	80	102	8 160€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	R1	Administrative support staff	0	0	0€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	R1	Youth Workers	0	0	0€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	R1	Managers	0	0	0€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	R1	Teachers/Trainers /Researchers	100	74	7 400€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	R1	Technicians	80	55	4 400€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	R1	Administrative support staff	0	78	0€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	R1	Youth Workers	0	137	0€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	R1	Managers	0	164	0€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	R1	Teachers/Trainers /Researchers	105	137	14 385€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslerova 440	Czechia	R1	Technicians	89	102	9 078€
E10208976	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	R1	Administrative support staff	0	47	0€
E10208976	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	R1	Youth Workers	0	74	0€
E10208976	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	R1	Managers	0	88	0€
E10208976	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	R1	Teachers/Trainers /Researchers	100	74	7 400€

E10208976	UNIWERSYTET PRZYRODNICZY W POZNANIU	Poland	R1	Technicians	83	55	4 565€
					744		70 047€

Multiplier Events

OID of the Organisation	Name of the Organisation	Country of the Organisation	Identification	Country of Venue	No. of Local Participants in Physical Activities	Grant per Local Participant in Physical Activities	No. of Foreign Participants in Physical Activities	Grant per Foreign Participant in Physical Activities	No. of Participants in Virtual Activities	Grant per Participant in Virtual Activities	Total (Calculated)
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	EE1	Slovakia	0	100€	0	0€			0€
					0		0		0		0€

Learning/Teaching/Training Activities

Travel

OID of the Organisation	Name of the Organisation	Country of the Organisation	Activity No.	Field	Distance Band	Travel Grant per Participant	No. of participants	Exceptional costs for expensive travel	Total (Calculated)
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	A2	Higher Education	0 - 99 km, 100 - 499 km	0	0	0€	0€
E10205924	MENDELOVA UNIVERZITA V BRNE	Czechia	A1	Higher Education	100 - 499 km	180	4	0€	720€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	A2	Higher Education	0 - 99 km	0	0	0€	0€
E10200883	TECHNICKA UNIVERZITA VO ZVOLENE	Slovakia	A1	Higher Education	100 - 499 km	180	5	0€	900€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslova 440	Czechia	A2	Higher Education	100 - 499 km	0	0	0€	0€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslova 440	Czechia	A1	Higher Education	0 - 99 km	0	0	0€	0€
E10208976	UNIWERSYTET PRZYRODNI CZY W POZNANIU	Poland	A2	Higher Education	100 - 499 km	0	0	0€	0€
E10208976	UNIWERSYTET PRZYRODNI CZY W POZNANIU	Poland	A1	Higher Education	100 - 499 km	180	6	0€	1 080€
							15	0€	2 700€

Individual Support

Short-term Learning, Teaching and Training Activities

OID of the Organisation	Name of the Organisation	Country of the Organisation	Activity No.	Field	Country of Destination	Participants (Without Accompanying Persons)						Accompanying Persons						Total (Calculated)
						Duration (days)		No. of Participants (Without accompanying persons)	Grant per Participant - Physical Activity	Grant per Participant - Blended Activity	Grant per Participant - Virtual Activity	Duration (days)		No. of Accompanying Persons	Grant per Accompanying Person - Physical Activity	Grant per Accompanying Person - Blended Activity	Grant per Accompanying Person - Virtual Activity	
						Physical Activity	Virtual Activity					Physical Activity	Virtual Activity					
E10205924	MEND ELOVA UNIVERZITA V BRNE	Czechia	A2	Higher Education	Slovakia	21	0	7	0€	0€	0€	0	0	0	0€	0€	0€	0€
E10205924	MEND ELOVA UNIVERZITA V BRNE	Czechia	A1	Higher Education	Czechia	9	0	4	130,5€	130,5€	0€	3	0	2	159€	159€	0€	840€
E10200883	TECHNICKÁ UNIVERZITA VO ZVOLENE	Slovakia	A2	Higher Education	Slovakia	48	0	43	0€	0€	0€	0	0	0	0€	0€	0€	0€
E10200883	TECHNICKÁ UNIVERZITA VO ZVOLENE	Slovakia	A1	Higher Education	Czechia	12	0	5	168€	168€	0€	3	0	1	318€	318€	0€	1 158€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslova 440	Czechia	A2	Higher Education	Slovakia	12	0	4	0€	0€	0€	0	0	0	0€	0€	0€	0€
E10095133	Vyšší odborná škola a Střední průmyslová škola, Volyně, Resslova 440	Czechia	A1	Higher Education	Czechia	28	0	7	0€	0€	0€	0	0	0	0€	0€	0€	0€

E1020 8976	UNIWE RSYTE T PRZY RODNI CZY W POZN ANIU	Poland A2	Higher Educati on	Slovaki a	21	0	7	45,43€	45,43€	0€	0	0	0	0€	0€	0€	318€
E1020 8976	UNIWE RSYTE T PRZY RODNI CZY W POZN ANIU	Poland A1	Higher Educati on	Czechi a	12	0	4	174€	174€	0€	6	0	2	318€	318€	0€	1 332€
					163	0	81						12	0	5	3 648€	

Annexes

The maximum size of a file is 15 MB and the maximum total size is 100 MB.
 The maximum number of all attachments is 100.

Declaration on honour

Please download the declaration on honour, print it, have it signed by the legal representative and attach.

Other documents

Please attach any other relevant documents.

If you have any additional questions, please contact your National Agency. You can find their contact details here: [List of National Agencies](#)

List of documents

No	Name	File size (kB)	Type of document
0	Complete_Timesheet_for_all_partners.xlsx	73	Other document
1	Confirmation_of_interest_in_outputs.pdf	250	Other document
2	Meeting_poznan.pdf	1795	Other document
3	Disemination_Chip_and_Chipless_conference.jpg	9287	Other document
4	Disemination_Chip_and_Chipless_conference_2.jpg	9767	Other document
5	Diseminace_BIP_Maribor.jpg	485	Other document
6	Robodig_projektové_stretnutie.pdf	188	Other document
7	Attendance_list_and_certificate_CNC_course_Volyne.pdf	387	Other document
8	DeclarationOnHonour_2021-1-CZ01-KA220-HED-000023098_EN_2025-02-17T05_38_02_(1).pdf	145	Declaration on honour
9	Diseminace_Intet_Volyne.jpg	10619	Other document
10	Diseminace_Vystava_stroju_Lysá_2025.jpg	9336	Other document
11	Robodig_workshop.pdf	2191	Other document
Total size (kB)		44522	

Checklist

Before submitting your report form to the National Agency, please make sure that:

- You have uploaded the relevant results on the Erasmus+ Project Results platform: <http://ec.europa.eu/programmes/erasmus-plus/projects/>
- All necessary information on your project has been encoded in Beneficiary Module;
- The report form has been completed using one of the mandatory languages specified in the Grant Agreement;
- All the relevant documents are annexed:
- Declaration on Honour, signed by the legal representative of the beneficiary organisation;
- The necessary supporting documents as requested in the grant agreement;
- You have saved or printed the copy of the completed form for your records.

Conditions for the Final report submission

Final report can only be submitted if:

- All mandatory fields in the report have been filled in
- Reported Budget is greater than zero, see Budget
- All fewer opportunities participants in the project have a reason declared in the Fewer opportunities section
- Organisations of Invited Staff - with an ACTIVE status- in the project (if any) participate in at least one LTT activity
- Declaration on Honour has been uploaded
- Checklist has been fulfilled
- Participating organisations involved in activities are valid throughout the entire duration of the activities.
- Report version should not be Cancelled