





Result 4.8 SME-fair Digitalization and Trainings Teacher digital Skills



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3LOE

Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy Co-funded by the Erasmus+ Programme of the European Union





Language

English

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I Summary of the Project and Introduction

1. About the 3LOE project

Around 99% of all EU businesses are SMEs, creating up to 70% of all jobs. In general, SMEs have good growth prospects for the future and are particularly well equipped to solve environmental problems and to enhance the green economy. However, in most of the project countries, SMEs are confronted with a shortage of skilled workers and young entrepreneurs. This shortage of skilled workers is even more alarming taking into account that due to aging of current entrepreneurs, a large and growing number of companies will have to be handed over to the next generation. Furthermore, young specialists and entrepreneurs often lack the qualifications and skills needed in order to respond to contemporary developments in the fields of energy, climate and environmental protection. The following problems have been identified in SMEs working in the fields of green economy, energy and environmental protection:

- Blatant and growing shortage of skilled workers.
- Large qualification deficits, especially in the Green Economy.
- Loss of attractiveness and low qualification of school-based VET.
- Low rates of further training and insufficient orientation of offers to SME needs.
- Ageing of entrepreneurs and increasing shortage of young people (demographic change).
- Failure of business transfers and low rates of business start-ups.
- Low innovation rates and insufficient productivity.
- Not enough cooperation between universities and SMEs and a lack of teaching geared to SME needs.
- Comparably low internationalization of SMEs and vocational training providers.
- Lack of national level support for SMEs".

To meet these challenges, work-based learning and new paths in vocational training must be provided through cooperation between educational institutions, economic chambers and SMEs. University graduates are often well-qualified in theory, but lack practical knowledge, skills and abilities that are crucial for SMEs. For this reason, VET reforms must also involve higher education, and should implement dual bachelor's degree programs that combine a bachelor's degree with vocational training and on-sight work in companies.

In the 3LOE project, an innovative and complex project structure with 22 project partners from 7 countries as well as 60 associated partners from 13 countries was designed. In each country, centers of vocational excellence (COVEs) in Green Economy will be established, managed and their permanent continuation ensured. A transnational cooperation of the centers will be developed, extended to 60 education stakeholders from 13 countries and operated permanently in an institutionalized form. The centers will offer a wide range of dual education measures in vocational training, further education and higher education, that are being developed, tested and evaluated in the project. These educational measures on EQF levels 3-7 focus on Green Economy, Digitalization and Entrepreneurship. Furthermore, vocational and educational consulting and innovation support for SMEs will be developed and implemented. In total, seven Train-the-Trainer programs will be transferred to the 60 associated partners together with implementation advice.





The objectives and aimed outcomes of the 3LOE project can be summarized as following:

1. Foundation of a three-level Center in each project country

1.1 Building the "Green Economy" skills alliance for qualifications in SMEs with educational and economic actors from the 7 project countries; development of information and cooperation tools.

1.2 Expansion of the skills alliance to the 60 associated partners from 13 countries, comprising chambers of commerce, SME associations, as well as universities of applied sciences/colleges.

1.3 Development, testing and evaluation of a curriculum and teaching materials for Train the Trainer courses for personnel and center management (vocational school-teachers, trainers in SMEs and lecturers in further and higher education institutions).

1.4 Evaluation of the construction and operation of the seven centers of Excellence and of the transnational cooperation.

1.5 Development of business and financing plans and ensuring the long-term continuation of the seven centres and transnational cooperation.

1.6 Development, consulting and introduction of political strategy program.

2. Implementation and realization vocational training

2.1 Development and implementation of a tool for vocational and qualification counselling as well as a training for consultants and teachers to use the tool.

2.2 Implementation of the dual system, so that work-based learning is put into practice in the project countries.

Preparation and transfer of curricula and examination regulations for dual vocational training for different professions and implementations in Poland, Lithuania, Latvia and Spain.

Development, test and implementation Trainings for teachers to conduct dual vocational training as well as Training of trainers in SMEs.

2.3 Development political concept for the training and integration of young people with learning difficulties for young people with learning difficulties (EQF level 3).

Development, test and implementation of a dual vocational training "Specialist for Building Insulation".

2.4 Development, testing and evaluation of education programme, teaching materials and examination regulations for the provision of sector-specific qualifications already during the initial vocational training for stronger learners. Implementation in the dual system, so that work-based learning is put into practice in the project countries.

2.5 Development and implementation five-year technician training "Ecologic Solutions in Logistics".

3. Implementation and realization of further vocational training

3.1 Development and implementation of concepts and instruments for the management of continuing vocational training.

3.2 Development, test and implementation of a Train-the-Trainer program for teachers to conduct further training.





3.3 Development and implementation of a concept "SME-fair digitalization" as well as development, test and implementation of two train the trainer programs "Basic and advanced digital skills".

3.4 Transfer and implementation of four further trainings Energy Saving and Renewable Energies.

3.5 Preparation, transfer and implementation of six further trainings in the Green Economy.

3.6 Development, testing and evaluation of different training programs and teaching material for owners, managers and qualified workers of SMEs (EQF level 5 and 6). The trainings are specifically tailored to SME needs and different qualification levels and combine the transfer of technical, professional and management know-how.

- Training Enterprise and Entrepreneurship in Green Economy
- Training Energy Service Manager
- Trainings vocational Master Carpenter and Electric
- Training Construction Technician
- Training Service Technician
- Training Sustainability in foodservice industry

3.7 Development of regulations for new continuing education occupational profiles with a focus on the green economy.

3.8 Development of an integration programme for the unemployed (EQF level 4) in order to be able to place the unemployed in permanent jobs through further training seminars and a further training qualification.

4. Implementation and realization of higher education

4.1 Preparation and transfer of curricula, evaluation and examination regulations for two existing dual Bachelor degree programmes "Management of Renewable Building Energy Technology" and "Business Administration for SMEs".

4.2 Development and beginning of implementation of new dual Bachelor degree programs

- Business Administration & Sustainable Management of SMEs
- Entrepreneurship and Innovation in Green Economy
- Logistics Green Supply Chains
- Service technician
- Tutorial "Sustainable management Climate neutrality for companies"

4.3 Development, test and implementation of four study modules (EQF level 6) on SME management in the Green Economy sector, which will be carried out in the dual study system and integrated into existing Bachelor degree programmes.

4.4 Development and implementation of concept for innovation promotion Solutions for manageable R&D tasks of SMEs and conducting manageable R&D projects for SMEs-

4.5 Development, testing and implementation of Training program for university lecturers and SME advisors.





5. Dissemination, transfer and use of the project results

5.1 Development of a concept and summary evaluation of the dissemination results of all partners

5.2Transfer of all educational measures to 60 educational institutions in 13 countries and needs-oriented implementation consultations as well as realization of a bundle of measures for further dissemination of the project results.

5.3 Further dissemination activities such as presentations online, at third-party events, press releases and conferences.

5.4 Book with all results of the project and distribution via book trade.

For each of the three levels of educational measures there will be:

- Target-group-specific educational programs.
- Curricula, teaching materials, etc. developed in a leading role by the educational institutions of the respective level, whereby the educational institutions of the other levels (in particular universities) participate in an advisory and supportive manner.
- Representatives of the participant target groups involved in the development work.

All educational measures will be tested with the respective target groups under different national conditions in the countries, evaluated and completed on the basis of the evaluation results with application notes.

2. About SME-fair Digitalization and two Trainings Teacher digital Skills

The development and implementation of vocational training, continuing education and higher education measures will also need to comprehensively incorporate digital technology and solutions. In this context, there is a fundamental risk that digital technologies will simply be transferred from the large-scale economy that do not do justice to the specific conditions of SMEs. For this reason, a brief concept on SME-fair digitalization is presented first.

Likewise, digital teaching and learning methods will have to be used in the implementation of educational measures. Since many teachers have no or insufficient skills in this regard, two train-the-trainer programs were developed, practically tested, evaluated, finalized and implemented.

- Train the Trainer A Basic Digital Skills
- Train the Trainer B Advanced Digital Skills

In the future, these train-the-trainer programs will be run on an ongoing basis by the colleges and universities, so that teachers and consultants with comprehensive digital skills are constantly available in sufficient numbers at each of the eight centers of vocational excellence.





II Concept "SME-fair Digitalization"¹

An impulse for the work of the centres of vocational excellence and for further critical thinking²

1. Introduction

The term digitization is used to describe the possibility of converting analogue data (text, images, sound) into digital formats with which information technology data processing is possible. The increasing use in production, logistics, administration, etc., but also in everyday life, has led to an expanded understanding. In addition to the advantages of digital transformation (speed of information dissemination, networking of systems, cost advantages), the risks are also being addressed. These range from job losses and fears of data manipulation (hacking) to changes in social and communication behaviour. Emotions are polarized; they range from exaltation to uncertainty, from a positive attitude toward life to bitter rejection.

It is clear that the dynamics of technical developments are making profound changes possible in many applications. It is not always questioned whether these are in the interest of the users or only serve individuals (manufacturers, interest groups). The basic validity of the statement that technology as a basis and application as a possible use case can be designed, seems to have eroded.

It must be examined whether and to what extent digitization can still be shaped and geared to the needs of small and medium-sized enterprises: Are the applications suitable or adaptable for use in the skilled trades and SMEs?

The authors are certain that digital applications have considerable potential for use and benefit. They do not fear that there is not enough innovative power to find the right applications. However, they argue that it is not enough to rely on industrial development. Rather, it seems necessary to have an independent digitization strategy and to use the "market power of SMEs" to drive forward digitization in line with the craft sector.

With this article, the authors want to provide an impulse for formulating a concept for digitization that is appropriate to the trade. The Knowledge Alliance for Human Resources project is a suitable forum for dialog with companies and employees, with chambers and associations, and with research and consulting organizations.

We look forward to your constructive, thought-provoking, critical comments, suggestions and initiatives.

2. Guiding questions: Crafts and digitization

Craft³ is characterized by a close connection of hand, head and heart:

- + Hand for the skillful creation of goods and services,
- + Head for the expert and professional planning and execution as well as for the competent, experienced ability to improvise,

¹ Prepared by:Hanse Parlament

² See Discussion Paper "Handwerksgerechte Digitalisierung", Alexander Frevel with the collaboration of Jürgen Bönig and Werner Krassau, Hamburg 2019

³ "In view of the large number of trades (in Germany, 41 trades requiring authorization, 52 trades not requiring authorization and 54 trades similar to trades are listed in the Handicrafts Code), there is no such thing as "the" trade per se. A differentiation is necessary but can be omitted for the argumentation here.





+ heart for the quality of the work, the "work", the cooperation, the orientation towards the abilities and the well-being of the employees as well as the satisfaction of the customers.

What happens in these three dimensions during digitization?

- ¿ Will the hand be replaced by networked, self-learning machines?
- ¿ Is the head being replaced by algorithms?
- ¿ Is the heart being replaced by economics?

To be decided:

- What kind and what degree of penetration of digitization do "we", i.e. "society", want?
- What type and degree of reach of digitization do the crafts want?
- What type and scope of digitization is needed or should be avoided in order to satisfy customer wishes appropriately, to be able to provide craft services of a high quality at a reasonable price?
- So: what kind of craft do we want?

And more broadly, the following questions, among others, need to be answered:

- How can the interest of the craft sector be channelled in such a way that the manufacturers of digital machines and processes are guided by it?
- How should vocational training be designed so that proximity to materials, tools and products is taught in such a way that alienation from the hand is low, the head is not modularized, and the use of digital techniques is mastered individually and with organizational data autonomy?

3. Brief history of crafts, industry and digitalization

The development of culture happened and happens through active engagement of man with nature. Through the development and use of tools, the relationship to the environment and to oneself was changed. Several millennia passed from the first stone tools to more refined tools in the Iron Age. About 5,000 to 10,000 years ago, the first specialized crafts emerged through "professionalized tool use" that required long training and practice to achieve good results suitable for everyday use. Since then, there have been continuous innovations as production-related improvements in tool development, in processing methods, in manual skills, in work organization and in product-as well as customer-related services.

The crafts in a constant process of change and therefore have no version numbering that is somehow applicable (Craft X.0).

The first guilds as associations of master craftsmen were founded in the Middle Ages. Fishermen, bakers, saddlers, tanners, shoemakers, blacksmiths, stonemasons, weavers and many more joined together to form social and economic alliances. Among other things, this ensured production quality and regulated training.





The mechanized processing possibilities, initially still with human drives, then through the use of waterpower and steam engines, and the development of an infrastructure for the transport of goods and people (railroad) provided - with further social and economic changes - for a profound change in employment and working conditions. An industrial mode of production, also based on changed driving forces and mechanical production possibilities, began in the 18th century. Since then, industrial development has continued through technical and economic innovations. Decisive changes include electrification with developments toward cycle-based manufacturing (assembly line production) and process manufacturing (chemistry) in the first half of the 20th century and the use of electrical and information technology components for increased automation (e.g., programmable logic controllers) in the second half of the 20th century. The digitalization that has already begun is being continued through the networking of systems, sensor technology, technical assistance systems for information processing, and the like, with the vision of creating "artificial intelligence.

The way technology is used, and this is the central argument here, changes the form and scope of the possibilities for physical and thus human appropriation of the world.

In all previous fundamental pushes of innovation that led to the formation of technicalinfrastructural interconnections, a fundamental and conflict-rich process of formation was required. Private railroads became an integrated rail network only through state regulation after bitter competition. Energy supply systems are regulated in oligopolies (plus smaller suppliers). Mobile phone coverage by private companies is channeled with state network operating regulations. In all cases, qualifications and competencies have also been restructured, knowledge has been re-codified, etc. We call this process of generating regulative/regulatory structures quite generally "social consequences of technical innovation." - The current debate about the use - and increasingly also about the benefits and risks - of digital systems is in this phase of the formation of norms and rules for structuring the social network of interests.

Cross-company regulation always occurs when corporate interests (shareholders) lead to cut-throat competition (monopolistic market power) and the interests of the users (stakeholders) are not adequately taken into account. It is not clear, for example, who will ensure, in what form and to what extent, that the product quality of virtual systems (algorithms, data use, source codes) can be checked by users for their suitability in the same way as analog products (armature, ... table, ... dental implant).

However, the real challenge in information technology innovation does not lie in the question of ordered networks, as it is expressed, for example, in the discussion about the provision of fiber optic broadband networks. Much more important is the debate - albeit still inadequately conducted - about the power of disposal over data and over (global) knowledge. Should/should it be in the "hands" of a few companies such as Apple, Google and similar market-dominating enterprises or, in view of globalized markets, is there not rather a need for international agreement on a basic digital structure that safeguards democracy?⁴

⁴ See, for example, the proposal for a "Charter of Fundamental Digital Rights of the European Union". Initiative of the ZEIT Foundation, December 2016





4. Tool use and digitization

Digitalized technology applications are not fundamentally unsuitable for use in the skilled trades. The use of computer-aided design and manufacturing processes (CAD, CNC, CAM, ...), measurement and control technology, robots and handling systems, 3D printers, B2B- and B2C-oriented data exchange, etc. testify to a feasible integration into a number of trades.

What's more, planning and manufacturing processes equipped with digital technology are (could be) predestined for use in the skilled trades, so to speak. They enable flexible processing with small batch sizes. They guarantee high adaptability with qualityassuring standards. They can imitate manual machining processes and reproduce excellence.

However, digitization also changes the character of the tool and tool use. The sensoryphysical experience of machining materials, of using (partially) autonomous tools and machines becomes different when the distance between hand and head is too great and too indirect. Numerical models do not really lend themselves to the physical appropriation of reality.

What are appropriate tools for the crafts? What will hand-work be? How can the experiential value of grasping be preserved as an essential prerequisite of thinking and planned action?

It will have mental and psychological effects on the users if the immediate appropriation of the world no longer takes place through the use of tools on the work material but is generated virtually. How are the real possibilities of shaping reality explored and mastered?

What can be learned from this social-historical reflection - which is certainly very abbreviated here?

- Technological/technical development is interest-driven. It does not fall from the sky but is shaped and thus can be shaped.
- The outcome of the design/adaptation process, the "making society capable" of technology, is not technically determined, but depends on the assertiveness of the participants, i.e. on negotiation processes, historical coincidences, the course of events and the outcome of conflicts. [Already at this point it is to be noted: In this regard the handicraft should interfere consciously and organized!]
- The "social" character of the trades, the shaping of the self-image and the image of others, will also have to be debated.

5. State of digitization in the skilled trades

The level of digitization in the skilled trades appears to be comparatively high. According to the "Digitization Index for SMEs", 56% of companies use digital/IT-based applications, particularly in the areas of IT security and data protection (63%) and in customer relations (56%). However, these values only show the surface of what are, in the majority, rather low-threshold applications of information and communications technology.





The study by the ZDH and Bitkom leads to more differentiated assessments. Although 58% of companies use software solutions in the office, less than a quarter use them for content management or resource planning. The share of digital technologies for maintenance or in the production of goods is less than 10%. The development of digitized business processes is not yet widespread, nor are applications based on the "Internet of Things".

However, there is no differentiated, trade-specific survey of applications. The assessments of the use of digital technology and of productivity expectations shown in the studies are very general and do not provide a valid forecast.

In this respect, it can be stated - with the necessary caution - that digitization in core craft processes has not yet really taken place on a broad scale.

<u>Thesis 1</u>

In principle, digitization geared to industrial production ("Industry 4.0") is not per se appropriate for the skilled trades.

At the same time, however, it is also true that industrial production always includes a proportion of craft application processes, in which the training of tools that is appropriate for people, promotes knowledge, uses skills and stimulates imagination is and would be useful in the future.

6. What digitization does the skilled crafts sector need?

In order to ensure the future development of the skilled crafts sector, it is necessary to examine whether and in what form digitization is suitable, i.e., applicable, appropriate and useful, for supporting skilled crafts production and services.

The skilled crafts sector certainly does not need to adapt to what others are doing for them - and not primarily for the skilled crafts sector. It certainly doesn't need all business data to disappear into third-party clouds. Many craft businesses do not need digitized business processes or digitized process management. And automated production is not necessarily compatible with craft manufacturing. Moreover, it is not clear how many potential buyers will use smart technologies, that tracking apps and online orders will bring the skilled trades masses of orders, and that digitization will mean greater satisfaction for workers and customers.

So, what does the craft sector really need if it wants to maintain its uniqueness, its diversity, its creativity ...? What does it need to support the provision of services? What does it need in order not to go down in the maelstrom of "digitalization as a production motto" as a vicarious agent of industrialized market power and as an extended work/service bank?

There is no doubt that digital technologies can be usefully employed in the skilled trades. But this is - despite all the quasi "natural" application - not self-evidently suitable for the skilled trades.

<u>Thesis 2</u>

In a cross-company sense, the specific interests of companies and employees must be formulated as requirements as a guideline. This also includes clarifying who has the right of disposal over the data and who structures the networking of machines. This







requires a negotiation of the division of labor between the skilled trades and the producers of digital technology.

<u>Thesis 3</u>

The skilled trades need a digitization strategy oriented to the needs of the respective trades, i.e., a specific plurality of approaches - coordinated and integrated at the level of the overall organization - for which digital tools and networks should and can be used to support the work. What is needed first and foremost is an orientation toward the company's own qualities, its original products and services, the conditions under which work is to be done, and the wishes of the customer - and only then a technology geared to these qualities that supports the achievement of the goals.

<u>Thesis 4</u>

Digitization - or, more generally, the use of technology - and organizational implementation should therefore be the result of a strategy and not the starting point for concept less change hysteria and a lack of orientation in the wake of "we need that, too. What needs to be developed is a proactive concept aimed at maintaining craftsmanship, high-quality services and plants, and quality of work for the employees.

It is still necessary to maintain traditions and at the same time to develop them further, to use traditional advantages and to actively shape modernity. In other words, the (desired) technical consequences of social innovation must be examined.

7. Digitization in the skilled crafts sector - organization of adaptation

The fact that the skilled crafts organization has devoted itself intensively to this topic and formulated an orientation and basic requirements in the form of the position paper "Digital Agenda for the Skilled Crafts" and ensured a work-sharing development structure by setting up the decentralized association "Competence Center Digital Skilled Crafts" certainly has great advantages.

The competence center "supports small and medium-sized craft enterprises in tapping the technical and economic potential arising from the digital transformation. To reduce information deficits, the competence center provides decision-makers and experts in the skilled trades with practical information, qualification and support services:

- Production and automation
- Digital processes (process management, use of production IT)
- Digital business processes (services, service ideas)
- Information and communication⁵

Information, qualification and support for individual companies are good and important. However, they do not fill the gap in conceptual orientation. In order to achieve a specific, trade-specific application of digitized tools and services, a proactive and tradedifferentiated strategy needs to be developed, i.e.

⁵ <u>https://handwerkdigital.de/</u>



- More knowledge about the needs, possible applications, use and benefit expectations of (digital and analog) technology in various trades.
- Assessments of other/further developments (markets, customer requirements, consequences of demographic change, etc.) and their possible effects in the skilled trades.

8. Learning from the future

In order to be able to deal with these aspects properly, a dialog must be conducted on the desired future of digitization for the skilled trades. On the one hand, the tried and true must be transformed, and on the other hand, the new must be explored. A design process needs to be initiated in which a balance and new equilibrium between preserving and finding new things can be achieved.

This will certainly be a longer-term and ongoing development process that evaluates experiences and reviews the achievement of goals in order to be able to implement necessary adjustments quickly and flexibly.

For a systematic and valid development, country-specific exploratory studies would have to be designed, which would have to be coordinated with the organizations of the skilled crafts, the chambers of skilled crafts, trade associations and guilds, research institutions close to the skilled crafts and educational institutions.

To start with, a series of future forums based on the basic concept of a future search conference is proposed. In principle, it can be used for

- the development of common visions and practical actions in dialogue between different (interest) groups
- the development of a plan and the achievement of agreement for the implementation of visions or strategic decisions
- initiating rapid activities in the context of complex tasks that have not yet been coordinated and for which there is not yet a common vision".

Future Search is based on four fundamental principles:

- Bringing the "whole system" into one space
- Exploring the common big picture ("the whole elephant") as a background for local activities
- Focusing on future and commonalities instead of conflicts and problems
- Inviting self-organization and personal responsibility for activities during and after the conference.

Overall, the exploratory conferences (and then the in-depth studies) should have four essential elements:

(1) "Barometer of the present" - description of the actual situation



- What is the actual state of analogy and digital technology application in selected relevant trades?
- What qualifications are available for the use of various digitized tools and machines? What skills are taught for mastering complex systems and processes?
 What competencies are taught for mastering the requirements in order to navigate purposefully in an environment subject to dynamic change?
- What is going well in terms of technology use, organization, employment, work, competence, etc.? / What is critical ...?
- (2) "Trends"– Assessments and expectations
 - Which technology-related innovations are planned or expected?
 - Which organizational and work-related (content-related, methodological, ...) consequences of technology-induced changes are planned/expected?
 - Which social consequences (work, employment, organization, competence, ...) of technical changes are expected (feared, hoped for)?
 - Which technical consequences of social changes (e.g. demographic change) are expected?
 - Which technical and which interdisciplinary competencies are expected to be needed to drive and master the technical-organizational-social innovations?
- (3) "Learning from the future" visions for a "sustainable skilled crafts sector / for digitization in line with the skilled crafts sector" - with the focus on "competence requirements".
 - What ideas can be developed for a traditionally modern skilled crafts sector that offers excellent services for customers and outstanding working conditions for employees?
 - How can the culture of user autonomy be secured?
 - Which organizational and work-related (content-related, methodological, ...) changes/innovations are desirable?
 - Which technology can/should support/promote "social innovations"?
 - With which competencies can the sustainable craft be sustainable?
- (4) "Actively shaping the future" strategies and concepts
 - What goals best describe a desirable sustainable craft/trades A-Z?
 - What strategies are needed to achieve these goals?
 - Which technical, organizational and social design options should be developed?
 - What content and forms of training and continuing education are required for digitization that is appropriate for the trade?
 - What does the implementation concept look like? (Who will do what and by when?)





 What kind of training is needed for these applications in the skilled trades? What should and can be the content of continuing education and lifelong learning?

9. Excursus: Procedure of the Future Forum and possible participants

The (invited) participants represent "the whole system" (craft) or a large cross-section of the system. They provide and examine information. They work independently in small groups and plan goals and measures.

In the first phase, homogeneous groups (one industry, one hierarchical level, one professional group or similar) discuss. In the vision phases, the composition of each small group is such that it represents the entire system as far as possible (maxi-mal mix).

- The cooperation agreement on a forum includes few rules:
 - + All perceptions are valid.
 - + Differences and issues are acknowledged and explored, but there is no attempt to work through them or get caught up in them
 - + Participants look for commonalities.
 - + All information and results are logged.

The Future Forum has an ordered structure (topics, time, moderation) and lasts about two days.

The participants should be composed of different groups, with each group comprising as many people as there are differentiated groups.

For the forum presented here, the following composition might be appropriate:

Trade A - x (approx. 4)	e.g. electrical engineer- ing/electronics, metal construction, main and ancillary trades/construc- tion	Owners, master crafts- men, technicians/engi- neers, training manag- ers
Customers		
Technology and com- petence centers		
Manufacturing and ser- vice companies		IT Company Data Security
Educational institutions of the skilled trades, vo- cational schools, voca- tional academies		
Chambers, guilds, trade		Management
associations; trade un- ion(s)		Operations/Technology Consulting
Research institutes and research funding		Vocational education, business studies, history,





Others	sociology, work and or- ganizational psychology, economic philosophy and ethics, economics,
	e.g. specialized publishing houses, editors

Table 1: Stakeholders involved in the Future Forum

The five phases of the Future Forum are explained below and summarized in Table 2.

The dialogue starts with an examination of the present from the perspective of homogeneous groups. The representatives of a professional group or a system area assess the current "highs and lows" (what are we proud of - and what do we regret?) and then present the results in plenary. - A common knowledge space about all represented groups is created.

Task	Content	Form of dialogue
1. past [world, self]	Past: What are we proud of and what do we regret with regard to digitization	Homogeneous (pro- fessional) groups
2. present and expected (external) trends	What are the influencing trends / What do we expect with regard to digitalization and other influ- encing factors (demographics, globalization vs. local action,)?	Mind map in plenum
3. future - desired visions	Visions of the future	Groups with maxi- mum diversity
4. similarities	Explore commonalities	Groups with maxi- mum diversity
5: Plan measures, define procedure	 Selecting the three most important commonalities (goals) Work out instructions for the implementation Make agreements 	Evaluation (prioritiza- tion according to need for action and possibilities for ac- tion) in plenary ses- sion

Table 2: Development phases in the Future Forum

In the second phase, all participants create a common mind-map on the recognizable (expected, hoped for, feared) trends and challenges of the topic. These are then evaluated by the various groups involved (e.g. companies - intermediaries - research) according to the degree of influence (need for attention, importance of the trend), e.g. with points in different colors for the groups involved. In the case of great agreement, there are trends and challenges that are scored with all colors and thus indicate a consensus in the evaluation and those that are considered important by only one group and thus indicate a disagreement. In this way, commonalities and differences among the participants, i.e. in the system, become clear and accessible to a joint dialog.





In the third phase, participants are assigned to new groups so that each small group represents the entire system (maximum mix). The focus here is now on the development of visions for the future: "Digitalization in line with the skilled trades - what will we have achieved in 2025!"

In the fourth phase, the proposed measures go through a democratic bottleneck by establishing a consensus in the groups or in the plenum as to which are the most important proposed measures. For this purpose, thematic clusters are structured and transferred to a priority list.

Finally, agreements on further steps, activities, responsibilities, etc. are made together.

The central focus of the Future Forum should be on the development of a common goal orientation for digitization in line with the needs of the skilled trades, but can also concentrate on particularly relevant aspects, e.g., competence requirements.

10. In-depth Studies: An Outlook

Studies on the topic of "digitization for the skilled trades" would have to be broadly based in terms of content and trade-specific features. In addition to a trade-wide, trade-differentiated written survey (which can necessarily only include a few questions), the as-is analysis could be linked to the specifics with qualitative assessments obtained in workshops with people from organizations (chambers, guilds, trade associations), universities/universities, institutes and companies as well as in case studies. It will also be necessary to investigate what motives (younger) people have for working in the skilled trades (or not in the skilled trades) - and what expectations, fears, hopes ... employees in the skilled trades associate with "digitization".

A trend assessment of expected developments could be made on the basis of a literature analysis with a Delphi survey of experts.

On the basis of these findings, future competence requirements should be assessed. In comparison with existing offers and already planned innovations in education and training, the additional need for knowledge and skills should be described and submitted to the institutes and committees for further processing.

Conferences/workshops with dialogical methods (Open Space, Future Search Conference or similar) are suitable for the formulation of approaches for the strategic orientation, solution concepts and design requirements.

Possible approach

- (1) Conduct future forums as initial for practical and strategic orientations.
- (2) Checking whether an in-depth analysis and an exploratory study is necessary/desired,
- (3) Rough sketches for exploratory studies:
 - (a) Coordination with associations, chambers, institutes, etc.
 - (b) Exploration of funding opportunities
- (4) Detailed conception and application.



III Train the Trainer A Basic Digital Skills⁶

Concept and Curriculum

1. Introduction

This document constitutes a guideline for a "train the trainer" course for basic digital skills. It was developed within the course of the project "Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy (3LoE)", which is funded through the Erasmus plus program of the European Union (EU).

3LoE addresses the challenges of energy, climate and environmental protection by establishing "Centres of Vocational Excellence" (CoVE) in green economy and implements a wide range of vocational education, training and higher education measures concerning green economy, digitalization and entrepreneurship. The main objectives of the 3LoE project are to sustainably upgrade skills, secure the need for young professionals/managers and entrepreneurs, and strengthen the competitiveness of SMEs in the green economy as well as to realize energy savings, use renewable energies and environmental and climate protection through qualified and innovative SMEs.

This "train the trainer" guideline in basic digital skills is designed to support trainers in the CoVEs to conduct online trainings to target groups in order to upgrade skills, qualification and knowledge and thereby support businesses, especially SMEs, in becoming more sustainable and equipped to address future challenges.

This document was created by project partner 14 "WIFI Steiermark" and project partner 15 "Campus02" in the project "Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy (3LoE)".

In the framework of the project, this guideline is part of Work Package (WP) 4 - Second center level "Continuing vocational training" - Activity 4.2 "Train the Trainer – A: Basic Digital Skills".

It is aimed at trainers, educators and teachers across the levels 3 until 7 according to the European Qualification Framework (EQF). Trainers from all sort of sectors are included, e.g. higher and adult education, general and vocational education, etc. They are not limited to the place of training, i.e. schools, VET educations and higher educational institutes. It can furthermore be applied to employees, who wish to further their education in the relevant field of basic digital skills. Thus, the target group is considered as not being focused on a particular field of study, age or previous knowledge on the topic. It is seen as an interdisciplinary applicable guideline, independent of the expertise of the trainers.

⁶ Prepared by Wirtschaftsförderungsinstitut (WIFI) Steiermark and CAMPUS 02 Fachhochschule der Wirtschaft GmbH





This document focuses primarily on basic digital skills required to conduct trainings in a basic online or a mixed online/face-to-face setting. This training excludes the usage of virtual reality, augmented reality and mixed reality, as more extended digital knowledge as well as accessible hardware is required for the application of these technologies. Thus, this training is focusing only on the basic and essential competences of digital skills with affordable and easily accessible technologies that are required in a teaching setting.

The training will be tested at the project partners PP14 – "Wirtschaftsförderungsintitut Steiermark" and PP15 – "CAMPUS 02 Fachhochschule der Wirtschaft", and later will be distributed to all partners of the 3LoE project.

The training refers to basic concepts of the Digital Competence Framework for Educators (DigCompEdu) by the European Union. DigCompEdu is a framework that provides a general reference to support the development of educator-specific digital competences in Europe.⁷

DigCompEdu details 22 competences organized in six areas. The focus is not on technical skills itself, the framework rather aims to detail how digital technologies can be used to enhance and innovate education and training.⁸

Following list demonstrates these competences:9

- Professional Engagement
 - .1. Organizational Communication
 - .2. Professional Collaboration
 - .3. Reflective Practice
 - .4. Continuous Professional Development
- Digital Resources
 - .1. Selecting Digital Resources
 - .2. Creating and Modifying Digital Resources
 - .3. Managing, Protecting and Sharing Digital Resources
- Teaching and Learning
 - .1. Teaching
 - .2. Guidance
 - .3. Collaborative Learning
 - .4. Self-regulated Learning
- Assessment
 - .1. Assessment strategies
 - .2. Analyzing evidence

- .3. Feedback and planning
- Empowering Learners
 - .1. Accessibility and Inclusion
 - .2. Differentiation and Personalization
 - .3. Actively Engaging Learners
- Facilitating Learners' Digital Competence
 - .1. Information and media literacy
 - .2. Digital communication and collaboration
 - .3. Digital content creation
 - .4. Responsible use
 - .5. Digital problem solving

⁷ <u>https://ec.europa.eu/jrc/en/digcompedu</u> 8 <u>https://ec.europa.eu/jrc/en/digcompedu</u>

⁹ DigCompEdu. Punie, Y. (ed). EUR 28775 EN. Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73494-6, doi:10.2760/159770, JRC107466





Like this guideline, the DigCompEdu is directed towards educators at all levels of education. Thus, it forms the perfect framework to be used as a base for this document as well as a baseline for what constitutes "Digital Skills" within the European Union.

The digital tools shown in this documented are chosen in order to comply with and strengthen either one or more of the above stated competences.

This document will provide some explanations and basic knowledge in order to use conference systems on, primarily, personal computers, provide content via some standard programs (e.g. Microsoft (MS) Word, MS PowerPoint, etc.) as well as basic web-based content through e.g. search engines, etc.

The background for this not only encompasses the ongoing digitalization in the educational field, but it also the fact is taken into account that due to the ongoing Covid-19 situation, the popularity in online trainings has dramatically increased. Tools such as Zoom, Microsoft Teams, Big Blue Button, etc. became relevant for teachers, trainers and students from all levels of education.

Therefore, within this document an outline for using online conference tools is demonstrated. It will focus on the tool Big Blue Button, as this is the tool used at WIFI Styria. Furthermore, the guideline shall demonstrate how online courses can be conducted in an online setting using the learning management system (LMS) Moodle.

The guideline can also be applied to other platforms, as usually only the interface, but not the basic usability and functions, of these tools are different.

Furthermore, other conference programs may be accessed directly without accessing the LMS. Therefore, please note that if another conference tool is used, the parts about Moodle are non-applicable.

The target group of this training is not limited to any factor. Trainers in any field, ranging from the EQF level three till seven, can use this guideline, to get an overview and to improve their basic digital skills.

Regardless of previous skills, the trainer should be able to use basic digital tools and conduct online teaching after this train-the-trainer.

Name of the course

"Basic Digital Skills"

Type of Course and Form of Training

", Train-the-Trainer" – A further training in which trainers enable other people to also work as trainers in the field of the course.

The "train-the-trainer" will be held in a face-to-face setting; however, digital resources need to be available.

Target Group

Trainers in any field and educational institution, ranging from the EQF level three till seven.





Co-funded by the Erasmus+ Programme of the European Union

Objectives

Provide future trainers with basic digital skills to perform teaching in an online setting.

Course Duration and Organisation

This train-the-trainer is estimated to last approximately two to four hours. All trainers should have this train-the-trainer before they start their own training activities.

The duration can be subdivided in four short Modules, each lasting around 45 Minutes:

- Module 1: Introduction to basic digital Skills
- Module 2: Most common digital tools for teaching
- Module 3: Using a conference tool in teaching settings
- Module 4: Summary and open Question

Module 1:	The trainer provides basic	Duration:
Introduction to Basic Digital Skills	knowledge about following topics:	approximately 45 Minutes
	 Personal Computers Operating Systems Internet and WWW Why are digital skills important? 	
Module 2:	The trainer picks tools from	Duration:
Most common digital tools for teaching	the chapter "most common digital tools for teaching" and presents them.	approximately 45 Minutes
Module 3:	The trainer presents the con-	Duration:
Using a conference tool in teaching settings	ference system from chapter "The Conference System Big Blue Button".	approximately 45 Minutes
Module 4:	The trainer summarizes	Duration:
Summary and open Ques- tion	Module 1 to 3 and answers open questions of the partic- ipants.	approximately 45 Minutes
	Total	180 Minutes (excl. breaks)

Examination and Certification

There is no examination for this train-the-trainer. The certification is a proof of attendance.

Literature and Teaching Materials

This document comprises the main teaching material for the train-the-trainer – basic digital skills, especially the chapter "The Conference System Big Blue Button". In the chapter, "most common digital tools for teaching" digital tools with links are provided.

Provider





Campus 02 – Fachhochschule der Wirtschaft GmbH

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2. Most common digital tools for teaching

Below you can find a list with some of the most common digital tools used for online teaching. This document will not focus on all of them, however, links to the official websites are provided, where more information about the respective tools can be found.

Moodle

Moodle is a free and open-source course management and learning platform system. It is one of the world most popular learning management platform and is available in several languages. Moodle offers the possibilities to support cooperative teaching and learning methods.¹⁰

Link: Moodle - https://moodle.com/

Note: Moodle can be used for performing and strengthening several competences according to DigCompEdu:

- **Professional Engagement:** Organizational Communication; Professional Collaboration; Digital Continuous Professional Development
- **Digital Resources:** Selecting Digital Resources; Creating and Modifying Digital Resources; Managing, Protecting and Sharing Digital Resources
- **Teaching and Learning:** Teaching; Guidance; Collaborative Learning; Self-regulated Learning
- Assessment: Assessment Strategies; Analyzing Evidence; Feedback and Planning
- Empowering Learners: Accessibility and Inclusion; Actively Engaging Learners
- Facilitating Learners' Digital Competence: Information and Media Literacy; Digital Communication and Collaboration; Digital Content Creation; Digital Problem Solving

Microsoft Teams

¹⁰ https://de.wikipedia.org/wiki/Moodle





Microsoft teams is a platform for meetings, conferencing, chatting, collaborations and data sharing.¹¹

Link: Microsoft Teams - https://www.microsoft.com/de-at/microsoft-teams/log-in

Note: Microsoft Teams can be used for performing and strengthening several competences according to DigCompEdu:

- **Professional Engagement:** Organizational Communication; Professional Collaboration; Digital Continuous Professional Development
- **Digital Resources:** Selecting Digital Resources; Managing, Protecting and Sharing Digital Resources
- Teaching and Learning: Teaching; Guidance; Collaborative Learning
- Assessment: Feedback and Planning
- Empowering Learners: Accessibility and Inclusion
- Facilitating Learners' Digital Competence: Information and Media Literacy; Digital Communication and Collaboration; Digital Content Creation

Zoom

Zoom is a platform for meetings, conferencing, chatting, collaborations and data sharing.¹²

Link: Zoom - <u>https://zoom.us/</u>

Note: Zoom can be used for performing and strengthening several competences according to DigCompEdu:

- **Professional Engagement:** Organizational Communication; Professional Collaboration; Digital Continuous Professional Development
- **Digital Resources:** Selecting Digital Resources; Managing, Protecting and Sharing Digital Resources
- Teaching and Learning: Teaching; Guidance; Collaborative Learning
- Assessment: Feedback and Planning
- Empowering Learners: Accessibility and Inclusion
- Facilitating Learners' Digital Competence: Information and Media Literacy; Digital Communication and Collaboration; Digital Content Creation

Microsoft Office

Microsoft Office is available in several versions, depending on the operating system used and the requirements it should be checked which Microsoft Office version should be bought.

Following selected list of Programmes and tools are usually available in Microsoft Office and are helpful in a teaching environment:

MS Word

¹¹ https://de.wikipedia.org/wiki/Microsoft_Teams

¹² https://de.wikipedia.org/wiki/Zoom_Video_Communications





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Is a word processing programme and probably the most known and used one. It is used to generate text documents, such as reports, essays, feedback-forms, etc.¹³

MS Excel

Is the most widely used spreadsheet programme. It is used in the private and public sector alike. Like most spreadsheets, Excel allows extensive calculations with formulas and functions, including business, statistical and date functions. Excel also has numerous mathematical functions so that many business mathematics problems can be calculated.¹⁴

MS PowerPoint

Is one of the most widely used page-oriented (i.e. slides) presentation programme. It has many design options for individual slides. They range from simple text slides to slides with graphics, tables and diagrams as well as multimedia content such as film and sound.15

MS Outlook •

> Is a widely used software for creating, receiving and sending of e-mails and for managing appointments, contacts, tasks and notes.¹⁶

Link: Microsoft - https://www.microsoft.com/

Note: These tools can be used for performing and strengthening several competences according to DigCompEdu:

- Professional Engagement: Organizational Communication; Professional Collaboration •
- **Digital Resources:** Creating and Modifying Digital Resources
- Teaching and Learning: Teaching ٠
- Assessment: Analyzing evidence; Feedback and planning
- Empowering Learners: Accessibility and Inclusion •

Kahoot!

"Kahoot!" is a game-based learning platform for creating, sharing and playing learning games or trivia guizzes. It is used to motivate students to learn a subject matter. It creates a playful competition among fellow players. It is available as free and premium version.¹⁷

Link: Kahoot! - https://kahoot.it/

Note: Kahoot! can be used for performing and strengthening several competences according to DigCompEdu:

- Digital Resources: Selecting digital resources
- **Teaching and Learning:** Teaching; Guidance;
- Assessment: Feedback and Planning;

¹³ https://de.wikipedia.org/wiki/Microsoft_Word

¹⁴ <u>https://de.wikipedia.org/wiki/Microsoft_Excel</u>

¹⁵ https://de.wikipedia.org/wiki/Microsoft_PowerPoint ¹⁶ https://de.wikipedia.org/wiki/Microsoft_Outlook

¹⁷ https://de.wikipedia.org/wiki/Kahoot!





• Empowering Learners: Actively Engaging Learners;

Flinga Whiteboard

Flinga is an open tool for brainstorming, creating collaborative mind-maps and serves as a whiteboard.

Link: Flinga - <u>https://flinga.fi/</u>

Note: Flinga can be used for performing and strengthening several competences according to DigCompEdu:

- Professional Engagement: Organizational Communication; Professional Collaboration
- Digital Resources: Creating and Modifying Digital Resources
- Teaching and Learning: Teaching; Guidance; Collaborative Learning
- Empowering Learners: Actively Engaging Learners
- Facilitating Learners' Digital Competence: Digital Communication and Collaboration; Digital Content Creation; Digital Problem Solving

Miro Whiteboard

Miro is an open tool for brainstorming and serves as a whiteboard.

Link: Miro - https://miro.com/

Note: Miro can be used for performing and strengthening several competences according to DigCompEdu:

- Professional Engagement: Organizational Communication; Professional Collaboration
- Digital Resources: Creating and Modifying Digital Resources
- Teaching and Learning: Teaching; Guidance; Collaborative Learning
- Empowering Learners: Actively Engaging Learners
- Facilitating Learners' Digital Competence: Digital Communication and Collaboration; Digital Content Creation; Digital Problem Solving

Padlet

Padlet can be used for creating a digital noticeboard, in which various types of media such as texts, images, videos, voice recordings, drawings, etc. can be stored, in order to enable collaborative teamwork.

Link: Padlet - <u>https://padlet.com/</u>

Note: Padlet can be used for performing and strengthening several competences according to DigCompEdu:

- Professional Engagement: Organizational Communication; Professional Collaboration
- Digital Resources: Creating and Modifying Digital Resources
- Teaching and Learning: Teaching; Guidance; Collaborative Learning
- Empowering Learners: Actively Engaging Learners





• Facilitating Learners' Digital Competence: Digital Communication and Collaboration; Digital Content Creation; Digital Problem Solving

Mentimeter

Mentimeter, sometimes referred to as "Menti", is a computer programme or rather an app that can be used during presentations in order to get a real-time feedback from participants during the presentation.¹⁸

Mentimeter can be used in a limited amount free of charge. However, to use all options the software or a license has to be purchased.

Link: Mentimeter - https://www.mentimeter.com/

Note: Mentimeter can be used for performing and strengthening several competences according to DigCompEdu:

- Digital Resources: Managing, Protecting and Sharing Digital Resources
- **Teaching and Learning:** Teaching; Guidance; Collaborative Learning; Self-regulated Learning
- Assessment: Feedback and Planning
- Empowering Learners: Actively Engaging Learners
- Facilitating Learners' Digital Competence: Digital Communication and Collaboration MS Forms

MS Forms can create surveys and polls to collect customer feedback, measure employee satisfaction, and organize team events.

Link: MS Forms - https://forms.office.com/

Note: MS Forms can be used for performing and strengthening several competences according to DigCompEdu:

- Professional Engagement: Organizational Communication; Professional Collaboration
- **Digital Resources:** Selecting Digital Resources; Creating and Modifying Digital Resources; Managing, Protecting and Sharing Digital Resources
- Teaching and Learning: Teaching; Guidance; Collaborative Learning
- Assessment: Feedback and Planning
- Empowering Learners: Actively Engaging Learners
- Facilitating Learners' Digital Competence: Digital Communication and Collaboration

3. The Conference System Big Blue Button

Introduction:

¹⁸ <u>https://de.wikipedia.org/wiki/Mentimeter</u>





Co-funded by the Erasmus+ Programme of the European Union

WIFI Steiermark is using the conference system Big Blue Button (which is comparable to MS Teams, Zoom, etc.). Therefore, this part is focused on Big Blue Button, but can be theoretically used for other conference systems as well.

There are general rules for online courses. They are applicable to all online courses and must be followed by trainers as well as participants.

Following these rules ensures a smooth operation of the course for everyone involved. Obviously, depending on the setting they can be adapted.

- 1. Enter the meeting on time!
- 2. Close other programmes on the computer that are not needed. This improves network performance!
- 3. Energy supply: bring and plug in charging cable for laptop or smartphone!
- 4. Ideally ask questions via the chat function this ensures that the speaker is not interrupted!
- 5. Mute your microphone, unless you want to ask questions or participate in a discussion. Background noises can be very disturbing for the speaker.
- 6. Switch on the camera only when speaking (save bandwidth and CO₂).

Big Blue Button

You only need a personal computer (PC) or tablet with microphone and camera to participate.

The WIFI Styria uses the open-source learning platform Moodle for all of its contents. Depending on the respectively used platform, some of the information given below might diverge.

The WIFI learning platform includes a conference system in order to conduct trainings in an online setting. This conference system is called Big Blue Button (BBB) and, like Moodle, is based on open source.

The conference system BBB works directly in the browser, without additional installation. Furthermore, it also runs on iOS and Android and thus on mobile phones and tablets, which enables high independence and flexibility for trainers and student alike. It can even be started directly from the Moodle-App.

Please note, however, that the conference system is only supported by **modern web brows**ers.

A web browser (or sometimes just called browser) is a software that is mainly used to • get access to the World Wide Web (WWW). With this browser, websites can be found, read and managed. Commonly used browsers are Google Chrome by Google LLC, Mozilla Firefox by Mozilla Corporation/foundation or Microsoft Edge by Microsoft. There are many more browsers with different functionalities, designs, etc. available.



Unfortunately, the Internet Explorer, which used to be pre-installed on all Microsoft Operating Systems, no longer counts as a "modern browser".

Furthermore, the web browser "Microsoft Edge" supplied by Microsoft with Windows 10 (and probably with the follow-up version Windows 11) also has some severe functionality problems, when it comes to use Big Blue Button. However, Microsoft itself noticed this and has made "Edge Chromium" available in the Microsoft Store. As this new "Edge" version is based on the Chromium engine, it also works.

In the following, you can find a list of browsers that are able to run Big Blue Button:

- Mozilla Firefox (<u>https://www.mozilla.org/</u>)
- Google Chrome (<u>https://www.google.com/intl/de_at/chrome/</u>)
- Apple Safari* (<u>https://support.apple.com/de-at/HT204416</u>)

*If it does not work on MacOs with Safari, please switch to Google Chrome. This should always resolve that issue.

The conference system BBB includes the following elements/ functions:

- Microsoft PowerPoint supported lecture
- Bi-directional communication via audio and video
- Simultaneous usable whiteboard
- Screen sharing
- > Chat Function
- > Quick short polls

Once you have the right browser installed and started, you can open Big Blue Button directly via Moodle. No additional access data is required for BBB - the system can be started directly from a WIFI Moodle course.

Like Moodle, the conference system BBB also works "course-related". This means that only the trainers and participants of a respective course can "see" (or hear) each other in it.

• Trainers can use the system at any time - all they have to do is start the conference. At WIFI Styria there is a technical support, which can be contacted if issues arise.

They are available from 07:30 till 19:30 during the week and 15:30 on Saturdays. The contact details are:

- +43 316 602-719
- support@stmk.wifi.at

Figure 1 shows how the conference system BigBlueButton looks like:







Figure 1: BBB Screenshot

1 Access

To enter the conference system, please click on "BBB Conference System" in the "Communication" area. Then click on "Participate".



Figure 2: Access to BBB in Moodle at WIFI Steiermark



Figure 3: Button to Participate in BBB in Moodle at WIFI Steiermark





Note: Once you press the "participation button" (see Figure 3) a new Tab is opened in your respective browser.

Before the connection is started, BBB checks whether a microphone is available. If it is, you will be asked if you want to use it (it is also possible to listen only).

NACHRICHTEN	< Offentlicher Chat :	KA BBB Konferenzsystem (Aufzeichnung starten)	-
Offentlicher Chat NOTIZEN Ceteilte Notizen TELINEHMER (1) Nikolaus S(ch)	Willkommen bei BBB Konferenzsystem! Um zu zeigen, wie BigBlueButton arbeitet, haben wir diese <u>Tutorials</u> bereitzestellt. Verwenden Sie bitte ein H Störungen durch Geräusc: Dieses Meeting kann aufge This server is running <u>BigB</u>	Wie möchten Sie der Konferenz beitreten?	-
	Nachricht senden an Offentlicher Chat		٩

Figure 4: BBB - Choosing microphone or audio only

Note: The message "Connection to Echo Test" may be visible for up to one minute. Please do NOT cancel this process. If you are asked to release the microphone, you must allow this!

NACHRICHTEN	< Öffentlicher Chat						
NOTIZEN	Willkommen bei BBB Konferenzsystem!						
Geteilte Notizen	Um zu zeigen, wie BigBlueButton arbeitet, haben wir diese <u>Tutorials</u> bereitgestellt.			Willkommen	ar!		
TEILNEHMER (1)	Verwenden Sie bitte ein H Störungen durch Geräusch			×			
HIROIAUS S	Dieses Meeting kann aufge	Verbinde	zum Echotest				0
	This server is running <u>BigB</u>					ī	
						ł.	5
			www.stmk.wiff.at				
				< Folie1 ~ >	⊖ 100% ⊕ ↔ %		
	Nachricht senden an Offentlicher Chat	+)

Figure 5: BBB – Connection to Echo Test

You will then be asked to say a few words. When you hear them over the microphone, it is ensured that it is working and you are ready to go.







Figure 6: BBB – Connection to Echo Test

2 Surface

After that, you will already see the people who have entered so far (leftmost column).



Figure 7: BBB – Connection to Echo Test

3 Active users and roles

Basically, there are two different roles in the system. There is a moderator role and a participant role. These roles are taken over accordingly from Moodle: Trainers automatically become moderators, participants have fewer rights in BBB.

The moderation function can be recognized by the icon at the top left of the user name (small monitor).



Figure 8: BBB – Moderator Function





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The small microphone icon at the bottom right of the icon is also important:

- If it is green, it means that the person can speak. ٠
- If it is red, the person has not activated the microphone or has switched it off.



Figure 9: BBB – Microphone on and microphone of

All persons in a conference can speak, even simultaneously. The prerequisite is, of course, that the microphone is working and has been selected by you (i.e. "Listen only" is not activated).

You can also see when a person is speaking: the names appear at the top of the screen.



Figure 10: BBB – Person speaking

4 Chat

You can use the chat, e.g., to ask questions to the other participants or the trainer.

The chat window is located on the left-hand side of the screen. At the very bottom you will find the input field. Finish your entries with the "Enter" key.

All persons in the course can use the chat and all will also see the entries.

Optionally, you could also start a private chat by clicking on the corresponding name of the person in the list of persons.





NACHRICHTEN	♦ Öffentlicher Chat	<ଥ	BBB Konferenzsystem	Aufzeichnung starten			:
Signal Contract Chat	Willkommen bei BBB Konferenzsystem!						
NOTIZEN	Um zu zeigen, wie BigBlueButton arbeitet, haben wir diese <u>Tutorials</u> bereitgestellt.		in Ihr	Willkommen rem WIFI-Seminar!			
TEILNEHMER (1)	Verwenden Sie bitte ein Headset, um Störungen durch Geräusche zu vermeiden.						
Ni Nikolaus S(Ich)	Dieses Meeting kann aufgezeichnet werden.						
	This server is running <u>BigBlueButton</u> .						う 面
							5
			and the state of the state				
			www.stilik.writ.at	Folie 1 ~ >	$\oplus \oplus \oplus \mathfrak{S}$		
	Nachricht senden an Öffentlicher Chat	+	Q	s 🛛 🖉		Ce	

Figure 11: BBB – Chat function

5 Presentation

The trainers can use a PowerPoint presentation to structure the lecture. The slides of the presentation are displayed large on your screen.

Note: animations are not taken over from PowerPoint - all elements of a slide are simply displayed, regardless of whether they are animated or not.



Figure 12: BBB – Presentation

6 Using the Whiteboard

Trainers can share a whiteboard with participants.

The whiteboard only works within a presentation. The menu is located on the right edge of the screen.

The most important element of the menu is the "pointer". The arrow "Back" undoes the last step, the "cross" below it undoes all drawn elements.





Via the "pointer" you can call up a submenu in which you can choose between text and various elements.

NACHRICHTEN	< Öffentlicher Chat	<u>୍</u> ଟ	BBB Konferenzsystem			:
♀ Öffentlicher Chat	Willkommen bei BBB Konferenzsystem!					
NOTIZEN	Um zu zeigen, wie BigBlueButton arbeitet, haben wir diese <u>Tutorials</u> bereitgestellt.		Willkommen	(wp		
TEILNEHMER (1)	Verwenden Sie bitte ein Headset, um Störungen durch Geräusche zu vermeiden.		in mein von poenina.	WKO-		
Nikolaus S(Ich)	Dieses Meeting kann aufgezeichnet werden.			ΤΙΟΔΠ	0	<u>م</u>
	This server is running <u>BigBlueButton</u> .					う 扇
						5
			-			
			www.stmk.wifi.at	WIFI Steiermark		
			< Folie 1 🗸 > 🕞	100 % ⊕ ↔ 53		
	Nachricht senden an Öffentlicher Chat	+			(

Figure 13: BBB – Whiteboard Options

Using the "Text" icon, it is possible, for example, to add to your PowerPoint presentation.

Click and drag to the bottom right to create a marker for the text area.

When the text area is defined, you can start writing. Complete your entry with "Enter".

Once the help menu for texts and other elements has been opened, a colour selection is also available.



Figure 14: BBB – Text Options

7 Survey

Your trainers can ask for your opinion or selection of appropriate answers in short surveys.





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R Öffentlicher Chat	Willkommen bei BBB Konferenzsystem!				
NOTIZEN Geteilte Notizen	Um zu zeigen, wie BigBlueButton arbeitet, haben wir diese <u>Tutorials</u> bereitgestellt.		Willkommen in Ihrem WIFI-Seminar!		
TEILNEHMER (1)	Verwenden Sie bitte ein Headset, um Störungen durch Geräusche zu vermeiden.				
	Dieses Meeting kann aufgezeichnet werden.			1 m	5
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	Nachricht senden an Öffentlicher Chat	ŧ	o (*) 🖉 🖉		

Figure 15: BBB – Actions

For example, the question whether you want a break appears on your screen.

Click on the desired option:

NACHRICHTEN	< Umfrage X	SBB Konferenzsystem	 :
Signal Contract Chat	Geben Sie unten Ihre Daten für die Umfrage ein.		
NOTIZEN	Eine Frage stellen		
Geteilte Notizen	Test	Willkommen in Ihrem WIFI-Seminar!	
UMFRAGE			
Umfrage			athr
TEILNEHMER (1)			<u>ر</u> ب
Nikolaus S(Ich)	Antworttypen		「面
— 0	Richtig / Falsch A / B / C / D		ð
	Ja / Nein / Enthaltung		
	Teilnehmerantwort		
		www.stmk.wifi.at WIFI Steiermark	
		$\langle \text{Foliel} \lor \rangle \bigcirc 100\% \Leftrightarrow 23$	
			٩
		Figure 16: BBB – Questionnaire	

As soon as your trainers release the result, it will be displayed:





NACHRICHTEN	< Umfrage X	KA BBB Konferenzsystem	<u>.</u> :
Offentlicher Chat NOTIZEN Image: Constraint of the constraint of	Lassen Sie dieses Fenster offen, um auf die Antworten der Teilnehmer zu warten. Sobald Sie auf 'Umfrageergebnisse angezeigt und die Umfrage beendet. Test Fertig Ja 0 0% Nein 0 0%	Willkommen in Ihrem WIFI-Seminar!	
_0	Enthaltung 0 0% Umfrageergebnisse veröffentlichen Teilnehmer Antwort	www.stmk.wifi.at WHI Steiermark	6
		+	

Figure 17: BBB – release results

8 Share screen

Trainers can display practically any programme (e.g. PDF documents, but of course also MS Excel, PowerPoint etc.) on their output devices.

Under certain circumstances, it may be useful for you as a participant to use this function as well. The trainers can grant you the right to do this temporarily.

It is essential that you first start the programme whose screen content you want to display!

Afterwards, all screen contents are also transmitted to the participants.

👖 Apps 🧧 Moderne	Lernunter 😻 Team WWW&0	Auswählen, was geteilt werden soll		nmlung 🔇 Neuer Tab	» 🔝 Leseliste
NACHRICHTEN	< Umfrage	bbb8.wifionline.at möchte den Inhalt Ihres Bildschirms teilen.		ung starten	. :
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Figure 18: BBB – Screen Sharing





4. Train the trainer – FH CAMPUS 02

PP15 puts a strong focus on online trainings (e.g. blended learning courses). Also for in-class lectures video conference systems build a central element to connect to external (dislocated) experts within the course-unit (e.g. in form of discussions, presentations, coaching or as a lecture).

For specific break-out sessions, PP15 uses the possibilities within MS Teams to build individual break-out groups:



Along with the demanding situation caused by the Corana pandemic, the CAMPUS 02 put a focus into digitalisation of the course-units (as shown in this video: <u>https://youtu.be/mwkGMtjsZ54</u>)

This means, that all classrooms had been technically equipped with:

- Dual screen setup (one monitor for presentation, one monitor for the video conference participants)
- Mobil microphone(s)
- Audio setup
- Digital whiteboard pointer

For widening/deepening/refreshing the basic digital skills of the trainers, plenty of trainingmaterial is online available:

- with focus on MS Teams: <u>https://www.campus02.at/hochschuldidaktik/tel-tools/videokon-ferenzen/</u>
- for teaching with different technologies: <u>https://www.campus02.at/hochschuldidaktik/ange-bote/lehren-mit-technologien/</u>
- professional video support for trainers: <u>https://www.campus02.at/hochschuldidaktik/ange-bote/zusaetzliche-angebote/</u>



Implementation and Evaluation

1. Introduction

The objective of the following report is to evaluate whether the testing and implementation of the activities that were undergone in order to carry out the activity (A) 4.2: "Train the Trainer – A Basic Digital Skills" of Work Package (WP) 4 "Second center level "Continuing vocational training" (EQF Level 4 - 6)" achieved the desired goals. Furthermore, it is evaluated, what sort of impact the training had on the various participants.

The following questions are tried to be answered with this evaluation report:

- Did the curriculum reach the targets?
- How well was the knowledge creation and sharing realized?
- Did the participants assimilate knowledge and tools?
- Was the venue and equipment appropriate for the training course?
- What kind of further development will be needed, if any?

The evaluation report follows the evaluation concept, created by project partner 11 "RIGAS STRADINA UNIVERSITATE (RSU)" of the project "Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy (3LoE)", which is funded through the Erasmus plus programme of the European Union (EU). The "Basic Digital Skills" training itself as well as the testing was carried out within the course of the 3LoE project.

The training "Basic Digital Skills" was created by project partner (PP) 14 "Wirtschaftsförderungsinsitut der Wirtschaftskammer Steiermark (WIFI)" and PP15 "Campus 02 Fachhochschule der Wirtschaft GmbH (HS02)".

This training is mainly aimed to support trainers in Centers of Vocational Excellence (CoVE) such as the centers established in the 3LoE project - to gain basic digital competences to conduct virtual and digital trainings to target groups to upgrade skills, qualifications, and knowledge. Thereby, the target groups should be able to support businesses, especially SMEs, in becoming more sustainable and equipped to address future challenges. The trainers to be trained with this "Basic Digital Skills" course are not considered as being focused on a particular field of study or work. Therefore, regardless of the subject any trainer can be trained in this train-the-trainer course.

The development of the course curricula was carried out by PP14 WIFI and PP15 HS02 between August and October 2021.

The testing of the training was carried out in in two different scenarios. The first training was carried out, by including the "Basic Digital Skills" curriculum directly into the curriculum of an internal train-the-trainer course "WIFI Powertrainer – Didactics of Adult Education" at the premises of PP14 WIFI. This train-the-trainer course is mandatory for every trainer of the WIFI Styria, before the participants are permitted to carry out courses as trainers.

The whole train-the-trainer course took place in the period from the 31st of January 2022 until the 24th of March 2022. The contents of the "Basic Digital Skills" were presented on the 8th of February 2022 from 06:00 p.m. until 10:00 p.m.

The second scenario was that training was held online for partners of the 3LoE project and other interested parties on the 27th of April 2022. This way the curriculum could be tested in a classroom as well as in an online setting.

The Digital Competence Framework for Educators (DigCompEdu) by the European Union, on which the curriculum is based, was presented in both trainings to all participants.

Regardless of the setting, the evaluation of "Basic Digital Skills" was carried out in the following manner:

- The goals and objectives of the training were explained to the participants at the beginning of the training.
- The importance of the feedback was explained to the participants.
- The training was carried out.
- The participants were asked to provide feedback.
- The lecturers were asked to provide feedback.
- The feedback was evaluated and summarized in this report.

2. Participants and Lecturers

In Table 1 the participant profile of the course, which was held online are demonstrated.

Gender	Country of Origin	Educational background
М	Austria	BSc
F	Austria	-
М	Austria	-
М	Austria	-
М	Austria	DI(FH)
F	Austria	-





Μ	Austria	-
М	Austria	BA MA
М	Austria	Mag.
F	Austria	-

Table 1: Participants profile In-house training WIFI Styria.

The course "Basic Digital Skills" was presented by one lecturer.

For the online version of the training, the participants' profile is shown below. As the course was held online the profile was gathered from an online questionnaire which the participants filled out after the training. This profile provides details about the participants' profile:

Gender	61.1 % Female				38.9 % Male				
Age	11.1 % <30 83		3.3 % 30-50			5.6 % >50			
Country of origin	11.1 %	16.7 %	11.	1%	22.2 %	22.2	%	11.1 %	5.6 %
	AUT	GER	IT	A	LVA	LTU		POL	ESP

Table 2: Participants profile online training WIFI Styria.

The job positions of the participants in the online training varied from researcher/lecturer, to teacher, professor, Coordinator of international relations, Head of Development, Project manager and R&D Coordinator.

The gender distribution regarding all participants, i.e., the offline as well as the online training, was 50 % female and 50 % male participants. All participants received the teaching materials.

The online course was presented by one lecturer. The lecturers had more than 5 and between 2 and 5 years of experience.

Both lecturers provided feedback to the course. For the online training 18 people provided feedback. For the classroom setting course 5 feedbacks were gathered.

3. Evaluation

3.1 Evaluation in-house training

The first training in-house at the premises of the WIFI Steiermark was carried out in a classroom setting. The day the training took place was the 8th of February 2022. 4 hours were spend on training the future trainers on basic digital skills, equipment and digital tools available at the WIFI Steiermark.

Out of 10 people 5 provided feedback. All 5 people were below 50 years of age and all five are from the educational sector. Out of these five people one was female, and one was male. Furthermore, all participants participated in all four modules.







Figure 19: Female/Male distribution and background- In-house training WIFI Styria.

The general conditions of the training course were perceived generally as well, as the next figure shows.



Figure 20: General Conditions of the training course – in-house training

The five participants also rated the overall content of the training, which is demonstrated below.



Figure 21: General Conditions of the training (1) - in-house training







Figure 22: General Conditions of the training (2) – in-house training

It can be seen that the overall content of the course was rated well, with the exception of the given time scheduled for the individual topics, which must be considered in future applications of this course. The general conditions furthermore demonstrate that the train-the-training provides good information for the trainers.

The topics which were most relevant for the participants were rated as following:



Figure 23: Relevance of main topics - in-house training

Except for the first and last module, which manly deal with introduction and summary, all of the content were generally rated as relevant and useful. This is an indicator that the contents and tools of the course are perceived as useful.







Figure 24: Individual Topics – Topic 1 – in-house training



Figure 25: Individual Topics – Topic 2 – in-house training



Figure 26: Individual Topics – Topic 3 – in-house training







Figure 27: Individual Topics – Topic 4 – in-house training



Figure 28: Individual Topics – Topic 5 – in-house training

When evaluating the individual modules, it can be seen that especially the modules, dealing with the individual tools as well as the presentation tool are perceived as relevant. The information was always up to date. This means that when applied in the future, the contents should at least be revised once a year.

The free speech section was answered according to the list below:

- What was most interesting for you during the training course?
 - o "Variety of tools and the various tools"
 - o "Digital tools for interactive learning"
 - o "Tools"
 - o "Different online tools"
- What could have been done better? (E.g. was some topic missing or unnecessary)
 - o "basic digital skills longer"
 - o "Nothing, more time for hands-on"
 - o "Time"



- o "More time for trying out tools"
- Would you recommend the course to someone you know? If not, why not?
 - o "Yes"
 - o "Yes"
 - o "Yes"
 - o "Yes"
- Was anything missing that you might need in your (future) profession life?

o "No"

- Was the proportion of topics and time frame of the training course content suitable or should some parts be increased/decreased?
 - o "basic digital skills decreased"
 - o "suitable"
 - o "no"
 - o "time for practical training"
- Is there any other feedback on the training course you would like to share?
 - o "Digitalization is the future!"

The free speech section further underlines, that the main problem of the course was the time, whereas the main strength were the presented tools.

3.2 Evaluation online training

The second training was carried out as an online training on the 27th of April 2022. The training lasted for approximately 1.5 hours.

Out of 18 people 11 were female while 7 were male. Two persons were below the age of 30, 15 were between 30 and 50 and one was older than 50 years. 12 people came from the educational, 3 from the private and 3 from the public sector. This is shown in Figure 29.



Figure 29: Female/Male distribution, age and workplace of participants - online training

The participants came from following countries:





- Germany
- Austria
- Italy
- Latvia
- Lithuania
- Poland
- Spain

The following figures show the participants' feedback provided to the question how the general conditions of the training course were perceived:



Figure 30: General Conditions of the training (1) - online training



Figure 31: General Conditions of the training (2) - online training



The feedback provided by the online participants indicates that for all seven questions 50% or more than 50% strongly agreed with the statements. They also show that for every statement more than 15% agreed with the statements. However, it has to be acknowledged that especially statement 1 "The facilities (location, online tool etc.), for the training course were suitable" and statement 6 "I gained valuable knowledge from the training and examples presented by the lecturer" offer room for improvement. This indicates that the online setting was not as ideal as it should have been.

Following free speech answers were provided:

- "I enjoyed the training and found the way it was presented to be clear and precise."
- "The training was great but could have been even a bit longer (2hours) to have enough time to try the tools and to exchange more experience with each other in break-out sessions"
- "Thank You, everything went great"
- "We really appreciated everything"
- "I was already familiar with many of the tools presented, but I really enjoyed the initial presentation of WIFI and the opportunity to share impressions and experiences with other partners."
- "Very good"
- "Valuable Knowledge"
- "no complaints good workshop/training"

These statements indicate that the course was perceived as well. However, it has to be mentioned that people tend to rather give positive than critical feedback. One statement, concerning the timeframe of the course being too short coincides with the feedback given on the single choice questions.



The next question dealt with whether various tools that were presented were relevant or not:





Figure 32: Tools according to relevancy - online training

According to *Figure 32* it can be seen that the tool perceived as most relevant is "Zoom / MS Teams / Google Meet", followed by "Google Forms / MS Forms". The Figure also shows that while the relevancy of the tools differentiates, all presented tools were perceived mostly as highly relevant or relevant. This indicates that while obviously the curriculum needs to be updated from time to time, as technology improves and changes, the selected tools for the training were relevant.



Following the tools, the participants were asked to rate the overall presentation of the training.

Figure 33: Overall presentation of the training - online training

Figure 33 shows that for some participants the presentation was not clear and understandable. As 13 other participants said that it was clear and understandable for them, it can be assumed that the internet connection was part of the problem. Overall, the presentation was perceived as well.

The open question "What was most interesting for you during the training?" was answered be the participants with following statements:

- "Interactivity"
- "DigComp Edu Framework and the DigComp Into Action guide which has use cases"
- "To learn more about the European Competence framework model"
- "To try new tools"
- "The real practice of all the tools. Unfortunately we had technical problems on Google Chrome and we couldn't partecipate to everything."
- "Listening about the learner centric approach. Self evaluation about my "digital maturity"
- "Discussion on the tools for the use"
- "Possibility to meet with Project partners."



• "flipped classroom"

The overall statements are positive, however again the internet proved to be an issue.

The question "What could have been done better?" was answered with the following statements:

- "At this point, I cannot think of anything that could have been done better, it was a good mix for various levels of computer literacy. thank you."
- "A bit more time for the training (2 hours)"
- "Everything is fine"
- "I was totally ok"
- "to have more time for understanding different tools"
- "Nothing."

No suggestions for improvement were suggested. The overall feedback was very well.

"Would you recommend the course? If not, why not?" was answered by 8 people, of which all would recommend the course. This corresponds to more than 44%. This value however indicates that there is room for improvement of the course, as less than 50% of the participants would recommend it.

Only one participant mentioned that something was missing, that she or he was expecting, which was an open question in the feedback or the presentation about which digital tools are already used by the participants. This will go into the next training.

Also, one participant answered the question "Is there any other feedback on the training you would like to share?" that the she or he "would incorporate information about the youths current digital competencies. E.g., Tik Tok allows amazing content creation, and it can be incorporated in an engaging and fun way (based on the age group of course) into learning courses. I would be interested in this aspect but maybe as an engaging fun fact or additional information as food for thought." This suggestion should be considered when updating the curriculum.

3.3 Evaluation Lecturers

Both lecturers, i.e. for the in-house and the online training, presented all modules. One lecturer has an experience of more than 5 years, while the other one has experience between 2 and 5 years.

The general conditions were rated as follows:

- The facilities (location, room, online tool etc.) for the training course were: 2 x excellent
- The time frame and schedule for the training course were: 2 x good
- The curriculum provided was: 1 x excellent, 1 x very good
- The background knowledge of the training participants was: 1 x good, 1 x very good
- The motivation of the training participants was: 2 x excellent

The overall content of the training course was rated:





- The overall content of the training course was: 2 x excellent
- The way the content responded to the needs and goals of the training participants was: 1 x very good, 1 x excellent
- The relevance of the training course content for the overall qualification was: 2 x excellent Both trainers said that more time would have been good, while the online trainer said, that face to face would have been more beneficial.



A further set of questions was asked:









Figure 35: Further questions - online training

4. Main Findings and Conclusion

In general, the training was received well by the participants and the lecturers. Basic digital skills for trainers are perceived as important knowledge. The chosen tools were adequate for the training. The main conclusion is that more time needs to spend on this topic, independently of the setting. The curriculum needs to be updated regularly in order to keep pace with the ever-changing demand as well as the tools available. It can be said that the curriculum reached its target in providing basic digital skills to trainers. The knowledge creation and sharing was realized fairly well, however the time component as well as the online setting are two variables that should be adapted to future needs. Looking at the feedback most participants assimilated knowledge and will use the tools in their work. As mentioned before, the venue and equipment were fairly appropriate for the training course. However, when it comes to an online setting, it should be evaluated if everyone has a decent internet connection. Further development of the course is needed, in the sense that regular updates need to take place and the time frame should be expanded from four hours to six hours.



IV Training in Advanced Digital Skills¹⁹

Curriculum

1. Summary

This curriculum constitutes an integral part of the Train the Trainer in Advanced Digital Skills Concept (WP4 A4.4). It was designed within the framework of the 3LoE Project and aimed at the transfer of digital skills as an inseparable tool of pandemic and post-pandemic education. It is assumed that the curriculum will make it possible for other partners within the 3LoE consortium or other parties (such as associated partners) to implement the training for the benefit of their own trainers/ teachers. In this way, education, being the cornerstone of any change, may contribute to the actual changes in an economy, turning it on greener path.

2. Details of the training

Legal issues. The Train-the-Trainer training is considered among so-called short forms of education. Due to the nature of the training cannot count as an educational event that can be assigned ECTS points by Polish law. However, educational law changes pending, it might become a course leading to the attainment of ECTS points, and hence become a micro credentials training.

Structure. The training is divided into two level-modules:

Module A. Fundamental Digital Skills.

Module B. Advanced Digital Skills in Online Education.

Participants. The course is addressed to trainers and teachers at all levels of education (primary/ secondary/ tertiary/) who work or plan to work with digital tools/ technologies (ICT) in their courses.

Eligibility criteria. The basic eligibility criterion in the case of the two-level training is basic knowledge of ICT systems and educational tools, such as everyday operation of a personal computer; casual use of online and offline tools, such as e-mail client, webbrowser, word processing package, presentation software; basic knowledge of the Internet (including WWW, and in particular search engines); use of digital tools, such as a multimedia projector.

Trainers. Specialists in ICT technologies.

Duration. 32 teaching hours (Module 1: 12 hours; Module 2: 20 hours).

¹⁹ Prepared by Pomeranian University in Słupsk





Methods. A variety of teaching methods are used in the training. the suggested methods include: directed discussion, guided instruction, experiential learning, problembased learning and simulations. Project work is

Tools. Computer lab. Internet connection. Different operating systems (if possible). Interconnectivity of various devices (e.g. mobile phones). Various ICT equipment. Office software.

Evaluation. There is no knowledge- or skills-related evaluation envisaged. However, it might be a necessary element if the training assumes the form of a formal course in an educational context.

3. Program

Course	e A: Fu	ndamental	Digital	Skills
Module	Scope		Topics covered	Hours (45 mins)
		 Operating Systems a. Operating setting setti	stems. systems: lows, MacOS, Linux (co ; iOS (tablets, smartpho system recognition; ical neutrality.	1 omput- ones);
Module 1	Computer and com- puting – basic terms and concepts	 Digitization Document Tagging do Tagging do Metadata; OCR system 	scanning; ocuments; ms.	1
		3. Computer ne	tworks and the Interne	et 1

that

a. Operation of computers on the

computers see each other?);

b. "Find/Fix" the most common network

internal/external network (How is it





2		operation; b. Use of web browsers;	
Module	Data extraction	a. General scheme of www protocol	
		1. World Wide Web - WWW	1
Module	Scope	Topics covered	Hours (45 mins)
Madula	Coone	Texico covered	
		e. Email/computer/smartphone security.	
		d. Passwords and password manager:	
		c. Computer/network - risk	
		a. Legal aspects of attacks in cyberspace;	
		b. Cypersecurity	T
		b. Application.	4
		a. Principles of operation;	
		5. Machine learning and artificial intelligence	1
		and Google ecosystem.	
		crosoft	
		solutions on the example of the Mi-	
		b. Advantages and disadvantages of	
		Collaboration;	
		a. Online Collaboration, Mobile	_
		4. Data processing locally and in the cloud	1
		d VPNs	
		ii. deep web,	
		ii deen web:	
		c. Global network internet:	
		downtime errors;	

3Lol



c. http:// and https:// connections.	
2. Data sources	1
a. Digital Libraries;	
b. Photo banks	
c. Search for early and final versions of	
articles: Google Books, Google Scholar,	
PubMed, medRxiv, bioRxiv,	
OSFPreprints, zLibrary, OpenLibrary,	
Sci-hub;	
d. Researching network trends - Google	
Trends;	
e. Network Monitoring - Google Alerts.	
3. Internet search engines	1
a. Effective and quick search for content	
on	
the Internet;	
b. Logical operators and switches –	
advanced search.	
4. Data quality	1
a. Data accuracy problem;	
b. The problem of data completeness;	
c. Data integrity problem;	
d. Data validity issue.	
5. Copyright	1
a. License rights (Creative Commons, pub- lic	
domain, open source);	
b. Searching for content on the Internet,	
taking into account licensing rights;	
6. Support for tools available at the Center for Digital Humanities	1
a. Interactive monitor;	
b. Visualizer.	





Course B: Advanced Digital Skills in online education

Module	Scope	Topics covered	Hours (45 mins)
Module 1	Digital tools availa- ble at the Center of Digital Humanities – advanced course	 Digital tools available at the Center for Dig- ital Humanities -advanced features a. Interactive monitor; b. Visualizer. 	1
Module 2	Google tools and cloud teaching	 Gmail - advanced settings external email client setup b. automatic responder c. footer d. filtering e. labelling g. forwarding Google Drive - resource sharing options a. sharing b. access levels c. advanced settings Google Calendar - synchronization and sharing of calendars a. scheduling meetings (incl. Google Meet) b. advanced settings – visibility c. labelling Google Documents - online cooperation a. basic functions b. advanced functions (incl. translation) c. add-ons Google Sheets a. advanced search b. formulas c. useful features Google Forms – surveys 	4





		a. surveys	
		b. results	
		c. online tests	
		1. Video -conference programs - Google Meet, Microsoft Teams, Zoom)	3
		2. Advanced configuration of meetings	
	Currah waxaa taa ah	a. scheduling meetings	
Module 3	synchronous teach-	b. whiteboard	
	ing - video comer-	c. sharing access	
	ence toois	d. sharing screen	
		3. Synchronization with the calendar	
		4. Rooms (Microsoft Teams); Breakout rooms (Zoom)	
		1. Moodle	6
	Asynchronous teach- ing - Moodle and other tools	a. basic features of the Moodle platform;	
		b. creating and managing courses;	
		c. one course for many groups;	
Module		d. Gamification;	
4		e. assessment management;	
		f. Checking knowledge - tests	
		2. Google Classroom	
		3. Additional tools in education, including Google, Kahoot, Tricider, Jamboard forms	
		1. Features of a good presentation	4
		2. Microsoft Office PowerPoint	
		a. Basic functions	
		b. Advanced Functions	
Madula	Preparation of pro-	c. Graphics	
5	fessional presentati-	d. Export	
	ons	e. Video	
		3. Google presentations (Slides)	
		a. Basic functions	
		b. External media inclusion	
		c. Creating interactive materials	







		4. Templates, animations, interaction	
Module 6	Summary – Project work	1. Preparation of an online course using the tools known	2



Implementation

1. Introduction

The main objective of Train the Trainer "Advanced Digital Skills" activity was to expand and hone digital skills among training participants. There is no denying that digital skills have been an inseparable element of most professions for at least the last decade or two. The importance of the skills has acutely been recognised during the current Covid-19 pandemic. Without digital technology, a number of professions would have stalled, creating huge shockwaves across the economy. However, some professions have been quicker to catch up with the need to switch to digital than others. Also, the range of necessary digital skills has varied depending on the profession discussed.

One of the critical areas that had to swiftly move to the digital was education. It was extremely vital to continue the teaching/ learning process in the remote mode right from the beginning of the pandemic, not least because the consequences of omissions in this would have long-lasting negative consequences, possibly leading to a huge intergenerational inequality. What the pandemic contributed to, however, was that it "[...] has quickened a change in mindset about the use of technology, and we have a small window of opportunity to get teachers and administrators to see technology as part of the learning process.²⁰"

Teachers and trainers had to quickly adapt to the (often-) new digital reality back in March 2020 – the beginning of the Covid-19 pandemic. However, the skills acquired, even if they sufficed to conduct remote teaching, were often incomplete and focused on synchronous and some aspects of asynchronous teaching mode. Some critical aspects related to the digital reality were often disregarded, e.g. digital security.

Taking the above considerations into account, Pomeranian University in Supsk decided to draft and implement a training for trainers in the area of advanced digital skills. One of the rationale behind the training was that it should prepare teachers, including academic teachers, to take full advantage of the currently available digital technology installed. In the case of Pomeranian University in Słupsku, such skills will be used, inter alia, during the realisation of dual Bachelor study programme: *Logistics: Green Supply Chains*.

It was recognised that the training program should revolve around the following areas:

- using ICT devices;
- handling digital information;
- online safety;
- creating digital content;
- digital communication;
- digital interaction.

²⁰ https://blogs.worldbank.org/voices/we-are-losing-generation-devastating-impacts-covid-19.





2. Aims of the Training

The overarching objectives of the training include:

- expanding basic knowledge and skills on:
- computer technology, including some basic and advanced knowledge on computer and other hardware used in digital education;
- modern computer software, including modern operating systems, and selected software (including one for multimedia communication) used in digital education;
- computer networks;
- cloud computing;
- handling digital information;
- AI;
- digital safety;
- synchronous and asynchronous modes of digital education.
- learning specific methods used in digital education;
- learning about copyright issues in the digital world;
- honing presentation skills;

3. Organisation of the Trainings

- The trainings were divided into two parts. Part 1 Course A "Fundamental Digital Skills" was designed to allow participants with low (or insufficient) digital literacy to attend and hone their digital skills in preparation for the following Part 2 Course B "Advanced Digital Skills in Online Education".
- The total number of teaching hours envisaged for the training was 32, with 12 hours assigned to Part 1 or the training, and another 20 hours assigned to Part 2 of the training). <u>This constitutes a change when compared to the original training Concept submitted earlier in 2022</u>, where only 30 hours were envisaged.
- On account of the workload, each part of the training was taught over a period of two days. Part 1 of the training took place on 27-28.06.2022 (12 hours), and Part 2 of the training took places on 28-29.09.2022 (20 hours). The date of the second training was chosen close to the beginning of the new academic year so as to allow participants to revise their knowledge.
- Both parts of the Training took place at the premises of Pomeranian University in Słupsk, in a computer lab of the Department of Modern Languages at Słowiańska 8. The lab is a modern facility, opened in September 2022 and consisting of the following equipment:





- the trainer's/ teacher's equipment (modern computer, fully equipped to conduct synchronous online teaching; modern digital multimedia monitor 84" Newline; visualiser)
- 20 individual modern laptop computer terminals.

The lecturer that was the trainer for the training, Mr Mariusz Terebecki, is a specialist of cybersecurity from the Institute of Security and Management (Pomeranian University in Słupsk). The specialist had had a long history of similar trainings.

The participants (19 unique names) included academic teachers from the entire University, including from the Department of Management (within which Pomeranian University in Słupsk organises Dual Bachelor Study Programme in Logistics: Green Supply Chains). The presence list is included in Attachment 2 below.

Language of Instruction: Polish.

Evaluation: External, by a project partner.

4. Part 1 – Course A "Fundamental Digital Skills"

(12 hours)

Day 1 – Module 1 - Computer and computing – basic terms and concepts

- 1. Operating systems
- 2. Digitisation.
- 3. Computer networks and the Internet.
- 4. Data processing locally and in the cloud.
- 5. Machine learning and AI.
- 6. Cybersecurity.

Day 2 – Module 2 – Data extraction

- 1. World Wide Web.
- 2. Data sources.
- 3. Internet search engine.
- 4. Data quality.
- 5. Copyright.
- 6. Support for tools available at the Center for Digital Humanities

Please find a detailed curriculum attached (Attachment 1).



5. Part 2 – Course B "Advanced Digital Skills in Online Education"

(20 hours)

Day 1

Module 1 - Digital tools available at the Centre for Digital Humanities – advanced course

1. Revision, and the extension of knowledge, of equipment at the Centre for Digital Humanities.

Module 2 - Google tools and cloud teaching

- 1. Gmail advanced settings
- 2. Google Drive resource sharing options
- 3. Google Calendar synchronisation and sharing of calendars
- 4. Google Documents online cooperation
- 5. Google Sheets
- 6. Google Forms.

Module 3 - Synchronous teaching - video conference tools

- 1. Video -conference programs Google Meet, Microsoft Teams, Zoom)
- 2. Advanced configuration of meetings
- 3. Synchronisation with calendars
- 4. Rooms/ Breakout sessions

Day 2

Module 4 - Asynchronous teaching - Moodle and other tools

- 1. Moodle
- 2. Google Classroom
- 3. Additional tools in education, including Google, Kahoot, Tricider, Jamboard forms

Module 5 - Preparation of professional presentations

- 1. Features of a good presentation
- 2. Microsoft Office PowerPoint
- 3. Google presentations (Slides)
- 4. Templates, animations, interaction.

Module 6 – Summary – project work

1. Preparation of an online course using the tools known

6. Summary

The Training was overall a success, since it was well received by its participants. The participants – all of whom were academic teachers – were eager to start using more advanced digital tools/ functionalities in their classroom.



It was overall a good idea to divide the Training into two parts to allow less advanced participants 'catch up' with the baseline knowledge required for the "Advanced Digital Skills" training. The final course curriculum, as presented in this Implementation Report, differs from the training concept submitted earlier in 2022, both as regards the thematic scope, the internal organisation into modules (thematic units), and the number or hours. This was undertaken to better tailor the training to the actual needs of teachers taking part in the training.

The training was meticulously prepared by a specialist, with all materials (including all presentations) available to all participants during and after the training. Each specific topic was supplemented with a separate multimedia presentation, ion-class (real-time) presentation of tools/ functionalities. Most topics covered featured hands-on approach exercises.

The training could become a universal tool for the provision of knowledge and skills in the area of digital education. It would require the translation of all materials (curriculum, slides, supplementary materials) into English. It could become a hybrid training, in a considerable part available from a teaching/ learning platform (such as Moodle). What would certainly increase its popularity is the possibility of issuing a certificate.

Possible ways of improving the training:

- introduction of a preliminary competence test (to assess the level of participants and suggest Part 1 of the Training only to those who require it);
- introduction of a hybrid mode of teaching to allow participants re-use the teaching materials, revise and work at their own pace;
- translation of the entire training into English (=introduction of English as the language of instruction) for the training to become more universal;
- introduction of continuous assessment tool in order to monitor the progress of participants;
- final certification.