Introduction to the further training module "Digitised production professions" for specialist in vocational orientation

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Content

1. Explanation and aim of the further training module

Objectives of the training module:
The objective of the qualification module is to minimize the knowledge deficits of vocational orientation (VO) specialists, which arise due to constant changes because of the increasing digitisation in the world of work. In addition to the knowledge of newly created professions and changed profession profiles (like new additional qualifications) as well as the changed professional requirements and operational challenges that come along with the increasing digitisation, digital teaching methods and new social / media and methodological skills as well as the influence of changes of the digitisation on vocational orientation and its instruments should also be imparted.

With the qualification module, the specialists for vocational orientation (VO) should be further qualified so that they know the changes in the professions of the industrial-technical field and be able to use the knowledge in counseling and vocational orientation processes. Through the qualification, the counseling and vocational orientation process is further improved and the professionalism is increased. The young people can be given better quality, more professional and up-to-date advice and support in their career choice process. This on the other hand contributes to avoid dropping out of training/apprenticeship due to incorrect information about different professions and wrong ideas about new requirements and challenges.

Target group of the further training module and participation requirements:
The target group of the qualification module is all those people who give full-time advice and support in the field of vocational. This includes in particular actors such as teachers, social pedagogues or other specialists from the field of open youth work, career advisors and training advisors, e.g. in chambers and business associations. In addition to people who work full-time in the field of vocational orientation, the qualification module can also be used by people who are voluntarily active in the field and who are interested in acquiring further new knowledge about changes in professions in the industrial-technical field.

The requirements for the participants as well as the teaching content are formulated in such a way that they should have basic knowledge and previous experience in the field of vocational orientation, because the teaching content is partly based on an existing expertise. While some topics are fundamentally reworked, other topics require a certain amount of basic knowledge. In particular, the participants should have knowledge of the industrial-technical professions and the vocational training system as well as the instruments of vocational orientation as such.

Relevant knowledge and experience in the field of professional changes and vocational orientation due to the increasing digitisation are not obstacles to participate in the qualification, because existing knowledge can be refreshed and expanded. It is also possible to complete individual parts of the qualification module to deepen knowledge.

Content of the module:

The qualification module covers in total six main topics, which on the one hand deal with the professional changes and changed requirements due to the increasing digitisation in the world of work. The following levels are considered: Which professions are new? How have the professions changed? Sustainability of professions. On the other hand, the content is aimed directly at vocational orientation and the necessary changes and adjustments in individual VO-measures which result from the changes in professions due to the increasing digitisation. Furthermore the module addresses different forms of learning and in this context the use of digital media, digital teaching methods and relevant social and methodological skills that are needed by the vocational orientation staff and that has to be adapted. Finally, the specialists for VO are given opportunities and paths that enable them to update the skills and knowledge that are required for their advisory and support activities in the future independently.

The content takes into account both the aspect of counseling that comes into play in vocational orientation, as well as the preparatory, implementing and supporting activities that are necessary in the course of the vocational orientation process.

The following main topics are dealt with in the qualification module:

A) New media: Digital information search

B) Effects of digitisation on profession profiles and the vocational orientation

C) Changed profession profiles and comparison of old / new profession profiles

D) The changed job market against the background of digitisation

E) New social and methodological skills due to the changed vocational orientation

F) Continuous updates, further training, self-organized learning

The content of the qualification module are based on a needs analysis prepared together with experts of the sector. A qualitative vocational research investigation in five European countries served as the basis. Furthermore, the qualification module is part of four further qualification modules in which other vocational fields (craft, health care, environment and commercial field) as well as the topic of digitisation in general are focused. Because the content of the qualification module is self-contained and coordinated with one another the qualification module can be seen as an independent qualification on the one hand and on the other hand it is part of an overall qualification consisting of a total of five modules.

Work processes, knowledge, and skills covered by the module:

The knowledge and skills acquired as part of the qualification module contribute to the fact that advisory activities as well as accompanying and organizational activities can be implemented more professionally in the course of carrying out vocational orientation activities.

Due to the increasing digitisation in different sectors the profession profiles will keep changing as well as new also new professions come into existence. These constant changes lead to new demands on the specialists for VO.

Thus a qualitatively good vocational orientation requires expert knowledge of the changed vocational orientation and the changes in vocational education that have resulted from the influence of digitisation.

Furthermore, a qualitative good consultation and support for young people in the career choice process requires asvances media skills, from digital information acquisition and processing to digital teaching methods and learning form. This comes into play in the course of the work of a specialist for vocational orientation. The acquired specialist knowledge about professions, the labour market and the operational requirements and challenges can be passed on directly to the young people. The acquired knowledge helps to ensure that vocational orientation activities are implemented in an up-to-date and more professional manner. In addition, the participants are shown possibilities for their own further training and self-organized learning to identify, analyze and remedy their own knowledge gaps.

2. Framework of the module

Time scale of the module:
The duration of the qualification module comprises a total of five days with a teaching effort of 40 hours - 8 hours per day (including breaks). The qualification is mainly theoretical, whereby the imparting of expert knowledge as well as competences and skills is supported by numerous practice-oriented case studies as well as small role plays and tasks that have to be worked out independently. The participants have to work on problem-oriented questions and reflect on the results in the group in order to take into account further aspects and other perspectives in securing the result.

In addition, it is recommended to visit one or more innovative companies after the qualification, in which digitisation is very important and which employ employees from different professions. Alternatively, short internships in corresponding companies would also be an option. Therefore, the professional practice and the changes in the world of work due to the increasing digitisation should be directly experienced and understood. Such a corresponding procedure should be mandatory for the participants. The organization of such actions can take place on one's own initiative and / or be organized and supported by the qualifying institution. In the case that the participants visit companies after the qualification, this visit should be preceded by a question. This can be worked out with the participants as part of the qualification module. The results should be documented after the visit so that one has a basis for the exchange of experiences.

Framework conditions for the learning process that are used and why (for example training places):
In general, the framework conditions should be arranged in such a way that a good teaching and learning atmosphere is created, because the module is a further training course and thus learning takes place primarily on a voluntary basis. The learning location should also be centrally located in order to be easily accessible in terms of infrastructure and thus to save costs (e.g. for overnight stays) as well as long journeys. In addition, different forms of online learning can be offered for individual learning units via e-learning platforms, videos or interactive forms of learning, e.g. in the context of webinars. Because the qualification is a further education that is characterized by the transfer of knowledge on one hand and the exchange of experience on the other hand, hybrid learning is also possible, i.e. the inclusion

of digital forms of learning in a face-to-face setting. This means that the participants have the opportunity to complete parts of the qualification from their workplace.

Necessary technical equipment:
Because it is primarily a theoretical qualification, a learning room with the necessary technology and moderation materials is required. Furthermore the qualification also deals with digital teaching methods (learn and video platforms) as well as Internet platforms and the procurement of information via the Internet. It should be ensured that a digital device exist and it should be ensured that each participant has an own device to work on the learning tasks as well as for presentation. In addition, the participants should have the necessary technology for a possible introductory webinar. This includes an Internet-enabled device with a headset as well as the necessary software. In detail are needed for the qualification the following things:

- For presentations: interactive boards for presentations and for the implementation of learning and work tasks - alternatively laptop, tablet, beamer
- For documentation of results and presentation of individual and group work: flipchart and/ or interactive boards as well as moderation materials (cards, pens, etc.)
- To work with learning platforms: PC / laptop / tablet with Internet connection (if WLAN access is not possible) or connection options for corresponding devices of the participants
- In general: Internet access or functional WLAN access

Number of participants per training unit:
Because team / group work as well as role plays and discussions are planned as part of the qualification, a minimum of six participants is required. In order to be able to present and discuss the results in a meaningful way, the number of participants should not exceed 16 if possible. Thus, a group formation of four persons is possible, so that the results can be presented within the time frame of the individual teaching units.

3. Recommended used materials for the training module
The teaching and learning materials that should be used are primarily composed of presentations, worksheets, information materials as well as literature and internet sources. In addition, the participants receive case studies and work assignments which are made available via learning and work platforms. Furthermore Internet sources and databases are also to be used for research and analysis tasks.

4. Didactic structure

Structure of the module:
The structural preparation of the qualification module took place against the background that the qualification module

- ➢ is part of a qualification series, consisting of a total of five modules with the same structure,
- ➢ should be transferable to different EU countries and implemented there,
- ➢ is to be offered and implemented by different institutions (e.g. further training institutions for teachers, independent educational institutions, universities),

> ➤ is easy to understand for implementing institutions as well as for teachers / trainers,
> ➤ follows a simple logic in the implementation of the individual contents and can be adapted and supplemented at any time, i.e. allows a certain degree of flexibility in the implementation.

In order to meet these requirements, the following structure was developed:

1. **Table of contents:**
   This includes all teaching and learning content and is structured according to topics (see Chapter 1 - Contents), which in turn are structured according to detailed topics (A1, A2, etc.) For each detailed topic, the individual work steps or the knowledge, skills and competencies are briefly described. Corresponding topics and detailed topics can be found in the rough concept as well as the detailed schedules for each qualification day.

2. **Rough concept:**
   The rough concept was developed in a tabular form. It gives an overall overview of the qualification, i.e. which teaching unit is planned on which qualification day and what the learning objective looks like. Also there is an information about how much time should be planned for each topic, which teaching method is suitable, whether there are possible knowledge checks and which materials and technical equipment are required. The rough concept is used for orientation and enables a targeted preparation for the implementation.

3. **Detailed schedules:**
   These are schedules for each qualification day (an agenda) that provide information about which teaching units are planned when, their duration, content and methods and materials to be used. The detailed schedules also serve to orient the participants so that they know what they can expect on each qualification day.

4. **Introduction:**
   The here described introduction serves as a kind of instruction manual / overall concept for implementing the qualification module.

Teaching and learning content (structure):
The participants of the qualification module are given a broad basic and background knowledge on the changes in production professions due to the digitisation and on how to deal with digital information procurement by using new media and the use of digital learning forms.

In addition to the knowledge of the profiles, requirements and operational challenges in the industrial-technical field and the changes in existing professions, the background that is responsible for should also be considered.

Furthermore possible changes in vocational orientation are discussed by using the example of selected measures so that the participants acquire knowledge whereon they have to pay attention with regard to vocational orientation and certain measures. In order to impart the knowledge according to a logic the basic and background knowledge is deepened by using expert knowledge or by case studies from practice. In addition, approaches and examples should be used that are directly related to the activities of the participants i.e. that can be found in the counseling and support of young people in the career choice process.

The participants should be put in a position to bring young people closer to the changes in the world of professions, to present new professions and to present seemingly unattractive professions in an interesting way.

The changes with regard to profession profiles and vocational orientation as a whole also require an adapted handling with it and therefore affect the necessary competences which are needed by the participants to carry out their work. This includes media skills, methodological and action skills, analytical skills and the ability to choose teaching methods. The participants therefore acquire a wide range of new or adapted skills in the before mentioned social and methodological skills in order to be able to carry out their advisory and supporting activities competently and professionally.

Furthermore, they should be able to recognize actual changing processes and to draw conclusions for the counseling process. The participants acquire basic to in-depth knowledge about how they can update their knowledge and skills independently and prevent deficits and which sources, networks and co-operations can help them and how they can use them sensibly.

Competencies/skills/knowledge to be acquired during the training

Competencies / skills / know-how	Objectives - at the end of this module the learner will know / can do the following
Knowledge of different digital information sources on the regional and national level and their use	They know where to find different digital information sources (e.g. on the websites of the labour administration, chambers, training portals, ministries), can assess them in terms of their usefulness and know how to define search criteria sensibly and document data
They can use the Internet sensible and identify suitable sources for vocational orientation	They are able to use the Internet purposefully and to act safely in the digital environment, know different search engines and to use favorites folders, they know the criteria by which one can identify a suitable source of information
Overview knowledge of data protection-relevant facts in dealing with digital information	They have an overview of the copyrights and usage rights in the Internet and know the obligations in dealing with digital information and have basic knowledge of data protection
Overview knowledge of digital platforms for communication	They have an overview of different platforms like e.g. videoplatforms, learning platforms, social media platforms and have a basic knowledge of the use of platforms, i.e. they are able to use platforms or to develop their use themselves
Basic and background knowledge of digitisation in the world of work and in the private sector	They have a general basic and background knowledge of digitisation in the world of work (e.g. where take digital work processes place, how and why) and know its advantages / disadvantages with regard to the changes in professions as well as the benefits and can name digitisation examples from the private sector
Basic knowledge of the effects of digitisation on the training professions of the industrial-technical vocational field	They have basic knowledge of the effects of the digitisation on training professions of the industrial-technical field and basic knowledge of digital work and company processes (can define terms such as e.g. smart factory), of different forms of digitisation and their use, and know how the requirements for professions have changed
Theoretical expert knowledge of digitised VO measures	They have theoretical basics and expert knowledge of various digital offers in vocational orientation such as apprenticeship exchanges / fairs, virtual expert discussions, interactive offers and know their use

Theoretical and practical expert knowledge on digital aspects in general VO measures by using the example 1. company visits / work samples 2. training profession fairs 3. internships	They have the basics and expert knowledge of the three mentioned VO measures and know their objectives, advantages / disadvantages and know what digital work processes have changed in professions and they are able to prepare these three measures with a focus on digitisation as well as the resulting changed requirements and challenges and can carry out and follow-up and they are able to develop and carry out possible work samples
They can identify traditional industrial-technical profession profiles and especially professions that seem unattractive for young people	They know the traditional industrial-technical professions (production professions) and their advantages / disadvantages as well as the professions in this field that seem to be unattractive for young people and they are able to bring young people closer to these professions
Basic knowledge of change processes of the industrial- technical profession profiles due to digitisation as well as changed requirements and challenges	They know the different core work processes of different professional profiles and know how these have changed or will change as well as the requirements and challenges for the people who practice these professions
Comparison of the contents, requirement profiles and challenges of actual and future industrial-technical profession profiles	They are able to compare different industrial-technical professions with each other and derive differences with regard to the requirement profiles and operational challenges
Background knowledge on the future viability of industrial-technical profession profiles	Based on their knowledge of profession profile changes due to the increasing digitisation, they are able to make assumptions about how professions will develop in the future and which professions may be no longer exist and which one not will be influenced by the digitisation
Overview knowledge of new profession profiles in the industrial-technical field	They have an overview of new profession profiles and new supplementary additional qualifications in apprenticeships as well as the requirements and challenges that result from them
Overview of operational requirements in innovative companies due to digitisation	They have an overview of the framework conditions in innovative companies and know which changed requirements, competences and skills young people need to have for different apprenticeships
Basic knowledge of the effects of the development of the human-machine interfaces on skilled work	They will be familiar with new developments in the design of human-machine interfaces and their consequences for skilled work and how cooperation between human and machine could develop in the future
Basic and background knowledge of digital core work processes	They know what digital core work processes are and be able to describe and analyze them, know where they can be found and how they can be identified and they know their influence on the professional world and on training/apprenticeships

Knowledge of further training opportunities for different professions due to the changed profession profiles	They know the further training opportunities that are a consequence of the digitisation and can point out further training opportunities
Overview knowledge of 1. electronic and digital media (new media) 2. digital teaching methods	They have an overview of the electronic and digital media and their possible uses as well as the required skills to use them and how they can be transfer their use to young people. And they know different digital teaching methods, their use and information sources about them
Implementation of the analysis of the status quo of young people	They are able to recognize and analyze emotions, talents, abilities and skills as well as interests of young people and to document them in a comprehensible manner
Methodological and action skills to impart social and self competences to young people	They are able to develop missing skills in young people with a view to the professional requirements due to the increasing digitisation and to prepare suitable VO measures for them
All necessary competences to carry out VO measures, taking into account the changes caused by digitisation	They are able to acquire the necessary know-how, skills and abilities that they need to carry out adapted VO measures
Ability to compensate and eliminate knowledge gaps and deficits	They know the techniques and methods to identify gaps in knowledge and deficits and are able to self-reflect
Overview of networks and co-operations for vocational orientation in their region	They have an overview of sources, networks and co-operations that support them in working on their own deficits and know how to build and maintain networks and co-operations and they know further training opportunities to update their know-how

5. Applied teaching and learning methods

In general, the teaching / learning content is transferred on an input-oriented basis. In order to establish a reference to the working practice, the content is supplemented by practical case studies and role plays.

The reference to the world of work should be established through numerous work tasks that have to be worked out individually or in groups. Afterwards the results should be discussed with all participants. It should be used a mix of methods from different forms of learning, such as lecture-based and action-oriented methods by using various digital data sources and literature. The use of digital media plays an important role in this. These should not only be used to work out tasks, but also to document, present and reflect the results. The participants acquire their knowledge partly independently and on their own responsibility by using mobile devices such as tablets.

The preparation and presentation of the results as well as the subsequent discussion of the results are given particular importance, because thus courses of action for daily work are used or newly developed. The discussions also serve to exchange experiences between the participants, so that can be established quickly a reference to daily work.

Overall, electronic and digital media should be used more intensively in order to strengthen the handling of these and to promote their use even after the qualification has ended.

In order to check the acquired knowledge, different verbal knowledge checks take place, which are supplemented by a written test. By the verbal knowledge checks deficits should be identified quickly and promptly. So it can be ensured that at the end of the qualification the participants have the same status quo in terms of their knowledge about vocational orientation.

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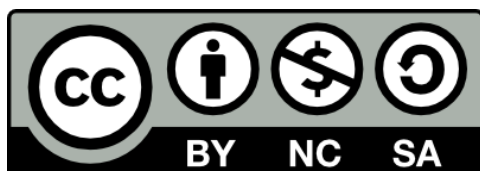
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Content table for the qualification module „Digitized production professions " of the Erasmus+-project „BOQua digital"

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No. Teach-/ Learning unit	Title of teaching / learning unit	Working steps / Teaching Content	Possible teaching materials (These can be created, adapted or supplemented and filled in by the trainer)
A 0	**New media: Digital information search**		
A 1	Digital information search and processing on the regional and national level	Identifying and analyzing different digital information sources (e.g. on the websites of the labour administration, chambers, training portals, ministries), handling information (defining search criteria, documenting data)	
A 2	Sensible use of the Internet for vocational orientation	Clarification of questions about the use of the Internet: search engines, storage of favorites, search terms - how is the Internet used sensibly?, source differences - what is a suitable and reliable source?	
A 3	Overview of relevant data protection facts in dealing with digital information	Copyrights and usage rights in the Internet and obligations when handling digital information	
A 4	Use of digital platforms for communication	Knowledge about different platforms like e.g. video platforms, learning platforms, social media platforms and basics of their usage	
B 0	**Effects of digitisation on profession profiles and the vocational orientation**		
B 1	Overview of digitisation	Learn the definition, tasks, benefits, advantages and disadvantages of digitisation in general, Work out digitisation examples in the private sector	
B 2	Effects of digitisation on the training professions of the industrial-technical vocational field	Get to know an overview of digitisation in the world of work, general digitised work and company processes (e.g. what forms are there ?, where are they used?), definition of terms (e.g. smart factory, big data), work out changed requirements for professions	

B 3	Digitised vocational orientation (VO) measures	Know digital offers (digital apprenticeship exchanges/fairs etc.), virtual expert discussions, interactive offers, realistic consultations	
B 4	Digital aspects in general VO measures: company visits in innovative companies and work samples	Objective and advantages / disadvantages of the measure, preparation / implementation / follow-up with reference to digital work processes and the resulting changes for professions (establishing and maintaining contact with companies, process planning, working out tasks), activities for establishing practical relevance - identification of possible work samples and planning the implementation	
B 5	Digital aspects in general VO measures: job/profession fairs	Objective and advantages / disadvantages of the measure, preparation / implementation / follow-up with reference to digital work processes and the resulting new professional requirements, work out tasks	
B 6	Digital aspects in general VO measures: internships	Objective and advantages / disadvantages of the measure, identification of suitable internship places with a focus on the digital work processes, preparation / implementation / follow-up	
C 0	**Changed profession profiles and comparison of old / new profession profiles**		
C 1	Traditional industrial-technical profession profiles	Work out / identify traditional industrial-technical professions and especially professions that seemed to be unattractive, get to know possibilities and ways to present such professions in way attractively, work out advantages and disadvantages of traditional professions	
C 2	Change processes industrial-technical profession profiles (professions in change)	Working out digitised core work processes of different profession profiles – How have and will profession profiles and apprenticeships change?, Work out new requirement profiles and challenges in the profession profiles	
C 3	Comparison of actual and future industrial-technical profession profiles	Comparison of professions (content, requirement profiles, challenges), work out differences	

C 4	Sustainability of industrial-technical profession profiles	Discussion of questions such as: Which professions will die out? Which profession profiles are not influenced by digitisation? How will the professions continue to change?	
C 5	Overview of new profession profiles in the industrial-technical field	Get to know new profession profiles, get to know profession profiles and possible supplementary additional qualifications in training professions as well as the associated new requirements / challenges	
D 0	**The changed job market against the background of digitisation**		
D 1	Operational requirements in innovative companies	Get an overview of the framework conditions of innovative companies, operational requirements - get to know required competencies, skills, school performances	
D 2	Human-machine interfaces	Discussing of questions like: Will humans be replaced by machines? Where are there human-machine interfaces?	
D 3	Digitised core work processes	Definition of "digitised core work processes", learning how digitised core work processes can be identified, clarification of questions like: Which core work processes are digital and where do they occur? How do they change the professional world? What influence do they have on training/apprenticeships?	
D 4	Changed further training possibilities	Clarification of questions like: What further training opportunities do new professions bring with them? Which degrees are possible? Methods of further training, one's own initiative	
E 0	**New social and methodological skills due to the changed vocational orientation**		
E 1	Media competence	Get to know different electronic and digital media, use and benefit of them, media competence development, how to impart the changed competences – digital competence transfer	
E 2	Digital teaching methods	Get to know selected digital teaching methods, use of digital teaching methods, sources for digital teaching methods	
E 3	Analysis of the status quo of the young people to be counseled	Correct perception of emotions, talents, abilities, skills, interests, identify / analyze and document meaningfully	

E 4	Method / action competence	Teaching young people lacking social competences/skills (possibilities and ways) against the background of new professional requirements due to the increasing digitisation, preparation of VO measures	
E 5	Necessary know-how, competences and skills for the implementation of VO measures with a focus on changes through digitisation	Working out of the necessary know-how, competences and abilities to carry out adapted VO measures, knowledge to acquire them	
F 0	**Continuous updates, further training, self-organized learning**		
F 1	Knowledge gaps and deficits	Recognize and analyze knowledge gaps, recognize and formulate your own deficits (self reflection)	
F 2	Source analysis	Get to know, identify and use sources for eliminating knowledge deficits, Identification and analysis of meaningful further training opportunities	
F 3	Networks and cooperations	Identification of useful existing networks / co-operations for eliminating knowledge deficits and get to know and use them, Establishing and maintaining meaningful networks / co-operations	

Rough concept for the qualification module „Digitized production professions " of the Erasmus+-project „BOQua digital"

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	Day 1	Day 2	Day 3
Topic	New media: Digital information search	Effects of digitisation on profession profiles and the vocational orientation	Changed profession profiles and comparison of old / new profession profiles as well as The changed job market against the background of digitisation
Teaching unit	A1 to A4	B1 to B6	C1 to C5 D1 to D2
Total duration	8 hous	8 hours	8 hours
Objectives	**A:** 1.) Get to know sources of information (e.g. on the websites of the labour administration, chambers, training portals, ministries) and be able to use the Internet sensibly to obtain information; be able to identify and analyze different digital information sources and to find and document information 2.) Get an overview of data protection-relevant facts 3.) Get to know different digital platforms (e.g. video platforms, learning platforms, social media platforms) and the basics of how to use them	**B:** 1.) Get an overview of digitisation in world of work and work out examples from the private sector 2.) Being able to assess the effects of digitisation on the industrial-technical vocational field and get to know general digitised work and company processes and how the require- ments for professions have changed as a result 3.) Get to know various digitised VO measures and their objectives, advantages and dis- advantages as well as their preparation, implementation, follow-up taking into account digital work processes and the associated changes for professions (i.a. company visits, job fairs and internships in detail)	**C:** 1.) Working out / identifying traditional industial- techn. professions and such that seemed to be unattractive for young people (and how presenting them in a positive way) 2.) Be able to know changed ind.-techn profession profiles as well as new requirement profiles / challenges 3.) Being able to compare actual and futureind.- techn. profrssion profiles 4.) Being able to assess how the ind.-techn. profession profiles will change in the future and what influence digitisation have on them 5.) Get to know new profession titles and profiles and the associated requirements / challenges **D1/D2:** 1.) Get to know the operational framework conditions and the requirements in innovative companies for trainees 2.) Significance of human-machine interfaces

Content			
	• Identification and analysis of different digital information sources regional and national(A1) • handling information (defining search criteria, documenting data) (A1) • Basic questions about Internet use such as Search engines, favorites storage, search terms, source differences (A2) • Rights and obligations when handling digital information as well as fact about data protection (A3) • Different platforms and basic use of this (A4)	• Definitions, tasks, benefits, advantages and disadvantages of digitisation in general as well as in the private sector (B1) • Overview of digitisation in the world of work and general digitised work and company processes (B2) • Definition of terms (e.g. smart factory, big data) (B2) • Changed requirements for professions (B2) • Digital VO-offers (digital apprenticeship exchanges/fairs etc.), virtual expert discussions, interactive offers, realistic consultations (B3) • Digital aspects in general VO measures: company visits and work samples - Objective and advantages / disadvantages of the measure, preparation / implementation / follow-up with reference to digital work processes and the resulting changes for professions (B4) • Activities for establishing practical relevance and identification, planning, implementation of work samples (B4) • Digital aspects in general VO measures: : job/profession fairs - Objective and advantages / disadvantages of the measure, preparation / implementation / follow-up and new vocational requirements (B5) • Digital aspects in general VO measures: internships - Objective and advantages / disadvantages of the measure, identification of suitable internship places with a focus on the digital work processes (B6)	• Identification of traditional industrial-technical profession profiles (Advangtage / disadvantage), especially unattractive professions as well as opportunities to present these professions in an attractive way (C1) • Digitised core work processes of different profession profiles as well as changes of profession profiles / training professions (C2) • New requirement profiles and challenges in the profession profiles (C2) • Comparison of traditional and changed industrial-technical profession profiles (C3) • Dying professions, professions not influenced by digitisation, future changes (C4) • New professions profiles, additional qualifications and thus changed requirements / challenges (C5) • overview of the framework conditions of innovative companies and operational requirements (needed competences, skills and school performances) (D1) • Human-machine interfaces as well as replacing people with machines (D2)

Method / Duration	Introduction: 30 Min. A1: 60 Min.; A2: 90 Min.; A3: 30 Min.; A4: 150 Min. Method: Welcome +self-introduction, lectures, presentation, assignment of task, individual and group work, discussion, practical exercise	Introduction: 20 Min. B1: 70 Min.; B2: 90 Min.; B3: 45 Min.; B4: 60 Min.; B5: 60 Min.; B6: 45 Min. Method: Lectures, presentation, assignment of task, individual and group work, discussion,, practical exercise	Introduction: 20 Min. C1: 60 Min; C2: 90 Min.; C3: 60 Min.; C4: 50 Min.; Introduction:10 Min. D1: 35 Min.; D2: 30 Min. Method: Lectures, presentation, assignment of task, individual and group work, discussion, practical exercise
Know-how check	Theoretical review, possibly questionnaires	Theoretical review, possibly questionnaires	Theoretical review, possibly questionnaires
Materials	Materials for A	Materials for B	Materials for C+ D1/D2
Equipment/ room	Class or seminar room with projector, presentation PC, mobile devices, literature,	Class or seminar room with projector, presentation PC, mobile devices, flipchart	Class or seminar room with projector, presentation PC, mobile devices, flipchart

	Day 4	Day 5
Topic	The changed job market against the background of digitisation as well as new social and methodological skills due to the changed vocational orientation	New social and methodological skills due to the changed vocational orientation as well as continuous updates, further training, self-organised learning
Teaching unit	D3 to D4 E1 to E2	E3 to E5 F1 to F3
Total duration	8 hours	8 hours
Objectives	**D3/D4:** 1.) Get to know and be able to identify various digitised core work processes as well as their influence on the professional world and training/apprenticeship 2.) Get to know different further training opportunities of new professions and the necessary requirements **E1/E2:** 1.) Get to know new electronic and digital media, their benefits and uses 2.) Developing media competence for yourself and methods for imparting digital skills to young people 3.) Get to know digital teaching methods, sources for these and their use	**E3/E4/E5:** 1.) To be able to analyze the status quo of young people (emotions, talents, abilities, skills, interests) 2.) To teach young people missing social competences 3.) To be able to prepare VO measures 4.) To be able to acquire competences for the implementation of adapted VO measures **F:** 1.) Know methods for self-reflection and be able to recognize and analyze the own knowledge gaps 2.) Know sources for eliminating knowledge deficits and be able to identify further training opportunities 3.) Know different networks / co-operations to compensate for deficits 4.) Acquire knowledge of building and maintaining networks / co-operations

Content	• Digitised core work processes and their identification (D3) • Further training possibilities of new profession profiles (D4) • Different electronic and digital media – use and benefit (E1) • Development of media competence and training of changed social competences as well as digital competence teaching/training (E1) • Digital teaching methods – use and sources (E2)	• Correct perception of emotions, talents as well as identification/analysis of abilities, skills, interests (E3) • Possibilities / ways to train young people in new social competences(E4) • preparation of VO-measures (E4) • Acquisition of know-how, competences and skills to carry out adapted VO measures (E5) • Recognize and analyze knowledge gaps – self reflection (F1) • Identification and use of sources to eliminate deficits (F2) • Identification of further training opportunities (F2) • Identification of useful existing networks / co-operations for eliminating knowledge deficits (F3) • Use, establishment and maintenance of networks (F3)
Method / Duration	Introduction: 15 Min. D3: 45 Min.;D4: 60 Min.; Test: 60 Min. Introduction: 10 Min. E1: 90 Min.; E2: 90 Min. Methods: Lectures, Presentation, Assignment of task, Individual and group work, discussion, practical exercise	Introduction: 15 Min. E3: 60 Min.; E4: 60 Min.; E5: 60 Min.; Introduction: 10 Min. F1: 60 Min.; F2: 60 Min.; F3: 45 Min.; Resume: 15 Min. Methods: Lecture, presentation, individual and group work discussion, practical exercise, research
Know-how check	Theoretical review + written performance test	
Materials	Materials for D3/D4 + E1/2	Materials for E3/E4/E5 + F
Equipment/ room	Class or seminar room with projector, presentation PC, mobile devices, literature, flipchart	Class or seminar room with projector, presentation PC, mobile devices, information material, flipchart

The detailed schedules for the qualification module "Digitized production professions" of the Erasmus+-project „BOQua dig"

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Day 1: Teaching unit A

Start	Duration [Min]	Title	Content	Material	Method
9:00	30	Welcome + Introduction to topic A0	Welcoming the participants round of introductions, explaining the objectives of the module, introduction to the topic: „ New media: Digital information search ", getting to know different new media	New media (mobile devices)	Personal presentation + lecture, clarification of experiences with different media and demonstration of the media to be used
9:30	60	Unit A1	Digital information search and processing: Identifying and analyzing different digital information sources as well as the right handling with information for the own use	ppt slides, digital information sources	Lecture, Presentation, development of search criteria and documentation of data
10:30	30	Morning break			
11:00	90	Unit A2	Sensible use of the internet for vocational orientation: Clarification of questions about the use of the Internet: search engines, storage of favorites, search terms, dealing with sources (differences, suitable sources)	ppt slides, mobile devices, assignment of task	Presentation, demonstration of examples, individual work, clarification of open questions and discussion of the results
12:30	30	Unit A3	Relevant data protection facts: Copyrights/usage rights and obligations when handling digital information	ppt slides, literature	Presentation

13:00	60	Lunch break			
14:00	90	Unit A4	Use of digital platforms for communication (e.g. video platforms, learning platforms, social media platforms): Get to know different platforms and basics of usage	ppt slides, mobile devices	Presentation, demonstration of examples
15:30	30	Coffee break			
16:00	60	Unit A4	Use of digital platforms for communication: Be able to apply the basics of usage	Assignment of task, mobile devices	Individual work and / or group work, task preparation, clarification of open questions
17:00	End day 1				

Day 2: Teaching unit B

Start	Duration [Min]	Title	Inhalt	Material	Methoden
9:00	20	Introduction to topic B0	Introduction to the topic: „ Effects of digitisation on profession profiles and the vocational orientation "		Lecture
9:20	70	Unit B1	Overview of digitisation: Definition, tasks, benefits, advantages and disadvantages of digitisation in general, digitisation in the private sector	ppt slides, flipchart	Presentation, discussion / brainstroming, securing results
10:30	30	Morning break			
11:00	90	Unit B2	Effects of digitisation on the training professions of the industrial-technical vocational field: overview of digitisation in the world of work, general digitised work and company processes, clarification of terms like smart-factory, big-data, work out changed requirements for professions	ppt slides, assignment of task, flipchart, Internet	Lecture, task preparation, discussion, group work
12:30	45	Unit B3	Digitised vocational orientation (VO) measures: Different digital offers, virtual expert discussions, interactive offers, realistic consultations	ppt slides, Internet, examples of digital online offers	Presentation, group work, presentation of results and securing of results
13:15	60	Lunch break			
14:00	60	Unit B4	Digital aspects in general VO measures: company visits in innovative companies and work samples (Objective and advantages / disadvantages of the measure, preparation / implementation / follow-up with reference to digital work processes and the resulting changes for professions), planning and implementation of work samples	ppt slides	Presentation , discussion

15:00	60	Unit B5	Digital aspects in general VO measures: job/profession fairs (Objective and advantages / disadvantages of the measure, preparation / implementation / follow-up with reference to digital work processes and the resulting new professional requirements)	ppt slides	Presentation, discussion
16:00	15	Coffee break			
16:15	45	Unit B6	Digital aspects in general VO measures: internships (objective and advantages / disadvantages of the measure, identification of suitable internship places with a focus on the digital work processes, preparation / implementation / follow-up)	ppt slides	Presentation, discussion
17:00	End day 2				

Day 3: Teaching unit C / D1 und D2

Start	Duration [Min]	Title	Inhalt	Material	Methoden
9:00	20	Introduction to topic C0	Introduction to the topic: „Changed profession profiles and comparison of old / new profession profiles"		Lecture
9:20	60	Unit C1	Traditional industrial-technical profession profiles: Work out / identify traditional industrial-technical professions (especially professions that seemed to be unattractive), get to know possibilities and ways to present such professions in a way attractively, work out advantages and disadvantages of traditional professions	ppt slides, case studies, assignment of task, Internet sources, literature, Internet	Presentation, group and individual work, task preparation, discussion, presentation of results and securing of results
10:20	20	Morning break			
10:40	90	Unit C2	Changed industrial-technical profession profiles: Working out digitised core work processes of different profession profiles, clarification of the questions: How have and will profession profiles and apprenticeships change?, Work out new requirement profiles and challenges in the profession profiles	ppt slides, case studies, assignment of task, Internet sources, literature, Internet	Presentation, group and individual work, task preparation, discussion, presentation of results and securing of results
12:10	60	Unit C3	Comparison of traditional and changed industrial-technical profession profiles (content, requirement profiles, challenges) and work out differences	ppt slides, flipchart	Presentation, discussion
13:10	60	Lunch break			

14:10	50	Unit C4	Sustainability of industrial-technical profession profiles: Which professions could die out? Which profession profiles are not influenced by digitisation? How will the professions continue to change?	Assignment of task, flipchart	Group work, task preparation, presentation of results, discussion
15:00	30	Unit C5	Overview of new profession profiles in the industrial-technical field, additional qualifications in training professions and the associated new requirements / challenges	ppt slides, tables	Presentation
15:30	15	Coffee break			
15:45	10	Introduction to topic D0	Introduction to the topic: „The changed job market against the background of digitisation"		Lecture
15:55	35	Unit D1	Operational requirements in innovative companies: Overview of the framework conditions of innovative companies, operational requirements, needed competences, skills, school performances	ppt slides, information material, tables	Presentation, lecture
16:30	30	Unit D2	Human-machine interfaces Discussing of questions like: Will humans be replaced by machines? Where are there human-machine interfaces?	ppt slides, case studies	Lecture, discussion
17:00	End day 3				

Day 4: Teaching unit D und E

Start	Duration [Min]	Title	Inhalt	Material	Methoden
9:00	15	Introduction to further sub-topics of D0 - Unit D3+D4	Introduction to further sub-topics of the topic: „The changed job market against the background of digitisation"		Lecture
9:15	45	Unit D3	Digitised core work processes: Learn to define and identify them, clarification of questions like: Which core work processes are digital and where do they occur?, How do they change the professional world?, What influence do they have on training/apprenticeships?	ppt slides, case studies	Presentation, discussion
10:00	60	Unit D4	Changed further training possibilities: Clarification of questions like: What further training opportunities do new professions bring with them? Which degrees are possible? Methods of further training, one's own initiative	ppt slides, assignment of task, flip-chart	Lecture, task preparation, presentation of results and securing of results
11:00	15	Coffee break			
11:15	60	Test	Knowledge request/test to unit A-D	Multiple choice/ single choice	Individual workit
12:15	15	Introduction to topic E0	Introduction to the topic: „New social and methodological skills due to the changed vocational orientation"		Lecture
12:30	60	Lunch break			
13:30	90	Unit E1	Media competence: Get to know different digital media, use and benefit of them, media competence development, how to impart the changed competences – digital competence transfer	ppt slides, mobile devices, case study, assignment of task	Presentation, group work, task preparation, presentation of results

15:00	30	Coffee break			
15:30	90	Unit E2	Digital teaching methods: Get to know selected digital teaching methods, use of digital teaching methods, sources for digital teaching methods	ppt slides, literature, Internet, assignment of task	Presentation, group and individual work, task preparation, presentation of results, discussion
17:00	End day 4				

Day 5: Teaching unit E und F

Start	Duration [Min]	Title	Inhalt	Material	Methoden

9:00	15	Introduction to further sub-topics of E0 - Unit E3+E4	Introduction to further sub-topics of the topic: „New social and methodological skills due to the changed vocational orientation"		Lecture
9:15	60	Unit E3	Analysis of the status quo of the young people: Correct perception of emotions and talents, identify / analyze and document abilities, skills, interests	ppt slides, role playing game	Presentation, group work
10:15	15	Morning break			
10:30	60	Unit E4	Method / action competence: Teaching young people lacking competences/skills (possibilities and ways) against the background of new professional requirements due to the increasing digitisation, preparation of VO measures	ppt slides	Presentation
11:30	60	Unit E5	Working out necessary know-how, competences and skills for the implementation of adapted VO measures with a focus on changes through digitisation and how to acquire them	ppt slides, Internet assignment of task	Presentation, group work, task preparation, securing of results
12:30	60	Lunch break			
13:30	10	Introduction to t he topic F0	Introduction to the topic: „Continuous updates, further training, self-organized learning"		Lecture
13:40	60	Unit F1	Recognize and analyze knowledge gaps, recognize and formulate the own deficits	ppt slides, Internet, flipchart, assign-ment of task	Group and individual work, task preparation, securing of results and presentation, discussion
14:40	60	Unit F2	Get to know, identify and use sources for eliminating knowledge deficits, identification and analysis of meaning-ful further training opportunities	ppt slides, Internet, info mate-rial, assignment of task	Presentation, task prep-aration, individual work

15:40	20	Coffee break			
16:00	45	Unit F3	Identification of useful existing networks / co-operations for eliminating knowledge deficits and get to know and use them and establishing and maintaining meaningful networks / co-operations	ppt slides, Internet	Presentation, own research
16:45	15	Resume	Evaluation		
17:00	End day 5				