Intellectual Output 2
Future of Jobs

Counsellors Study and Training Exchange Programme (C-Step)

Unit 2: Challenges and opportunities for companies within Industry 4.0

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Unit 2: Challenges and opportunities for companies within Industry 4.0

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1. Content of the Unit 2: "Challenges and opportunities for companies within Industry 4.0"

The unit description for all online training days in the Academia+ project should be understood as a helpful basis if you would like to hold a similar training for the covered topics within the online training days of the project. Therefore, this unit description is written in present tense and anonymous (although you find names of all speakers and lecturers of the online training in the original material on Moodle) and gives you detailed information about how to use the presentations, group exercises, conference meeting tools and group work tools.

The fifth online training day from the first Counsellors Study and Training Exchange Programm (C-STEP) in the Academia+ project focused on the topic „Challenges and opportunities for companies within Industry 4.0". The unit points to the Challenges of the Industry 4.0, the change and resilience towards the digital transformation and some possible barriers on the process.

This unit will also cover the challenges of the staff and structure of the company such as investing in a skilled workforce, keeping pace with new technologies, competing for a skilled workforce, training, gaps between skills needs and supply, inequality of skill/employment access, motivation of employees to follow the development, prevention of social exclusion, labour mobility, as well as challenges of Industry 4.0 related to competition, which are the main challenges and ways in which careers practitioners can help overcome them.

Furthermore the unit focuses on Industry 4.0 opportunities new businesses, new business models and new products/services and organization of work.

2. Learning outcomes

By focusing on the above-mentioned contents, Unit 2 aims to meet the following learning outcomes:

- Analyse challenges arising from change and resilience towards the digital transformation;

- Analyse the challenges for the staff and the structure of the company;

- Understand the main challenges and ways in which careers practitioners can help overcome them

- Identify the opportunities for new businesses/ Business models and New products/services

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3. Structure plan

Unit 2 is a whole day online training which combines input sessions with group work and self-learning sessions as well as plenary discussions. In the morning it focuses on challenges for companies within Industry 4.0. The afternoon, emphasizes the opportunities for companies within Industry 4.0.

An overview of the structure plan can be seen below and is explained in detail afterwards.

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Time	Topic	Method, media and material	Outcome	Comments
10.00	Introduction	Plenary session	Introduction speakers and agenda	Presentation of the agenda for the day, give a small talk about the last day and tell the days and topics of the other days
10.20	Challenges: Change and resilience to it	video plenum discussion fable Mentimeter	Participants discuss some possible barriers to change and resilience to it. Some barriers refer to the barriers to women's workforce (the Industry gender gap) which participation vary by industry and often reflect different	participants watch the video about jobs of the future from the cognizant center for the future of work (6 min.) https://www.cognizant.com/futureofwork/whitepaper/21-more-jobs-of-the-future-a-guide-to-getting-and-staying-employed-through-2029 moderation (1 min.): it seems that the Corona pandemic is pushing existing trends forward, trends seem to speed up especially in terms of digitalization the following ted talk covers different aspects of change in an overview (e. g. workplace/companies, health, universities) participants watch the ted talk with Ben Pring from cognizant center for the future of jobs (18 min.): https://www.ted.com/talks/ben_pring_the_new_jobs_of_the_future_and_other_insights_on_the_changing_workforce moderation (2 min.):

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| | | | industry cultures in addition to overarching economic and societal factors such as the dual burden of caregiving and breadwinning, unconscious biases, traditional organizational practices in the workplace, a lack of role models, confidence, etc. | quintessence: re-invent existing models in the different areas

(hint to the website https://www.cognizant.com/future-of-work especially the jobs of the future index - link in chat)

participants answer the question via Mentimeter, speaker sums up the main results of the wordcloud (10 min.) *link and code in the chat*

https://www.menti.com/7cr8oyr9tz

*Code **30 67 24 3***

1. What barriers to change might advice seeking people have?
2. What barriers to change might companies have?

after focusing on change it is time to focus on resilience to change

speaker is telling the participants the fable of the oak and the reeds (3 min.)

plenum discussion about the question:

3. What does this tell us about resilience and its components? (10 min.)

speaker gives short input about the results of Diane Coutu research about the 3 components of resilience: facing down reality, the search for meaning, ritualized ingenuity

(10 min.) |

				plenum discussion about the question (10 min.): How can these components help to overcome the barriers to change?
11.30	Short break			
11.45	Challenges: Staff and structure of the company ● investing in a skilled workforce ● keeping pace with new technologies ● competing for a skilled workforce ● training and retraining ● gap between skills needs and supply ● inequality of skill / employment access ● Mental and physical health of the worker ● Financial and legal aspects for	PPT Presentation	Participants get an overview of the segment of enterprises in Industry 4.0 – Industry profiles. They discuss some challenges for the staff and the structure of the company such as: invest in a skilled workforce, training and retraining, lifelong learning, motivation of employees, etc.	lecturer gives an input to selected topics from this list via ppt presentation speaker will frequently ask for questions during the presentation

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	companies ● Update equipment and accessories ● Motivation of employees to follow the development ● Prevention of social exclusion Labour mobility			
12.30	Challenges: Competition main challenges and ways in which careers practitioners can help overcome them	article reading plenum discussion	Participants know how to be prepare/get an idea towards competitive labour markets and how practitioners can help to overcome them	participants read the introduction and the conclusion of the article (5 pages) (15 min.): http://www.oecd.org/daf/competition/competition-in-labour-markets-2020.pdf *link in the chat* afterwards they discuss what career guidance practitioners should keep in mind about competitive labour markets when they counsel potential employees and the possible ways career practitioners can help to overcome them (10 min.) at the end of the session the participants share their thoughts about all the challenges discussed during the morning sessions (5 min.)
13:00	Lunch break			
14:00	Opportunities: New businesses/ Business models and New	Article reading, followed by group work, presentation	Participants know some opportunities for companies	5 minutes for introduction and explanation of the activity (participants divided in 8 groups)

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	products/services ● new specializations leading to the creation of more and new professions ● Sustainability of digitalized production and work Efficiency of production by technological rationalization of workflow and improvements in productivity	of the results and plenum discussing	within Industry 4.0, they learn new business models that will emerge in this landscape: new professions and professional profiles, digitized production and work, etc. Participants discuss other possibilities for the companies within the Industry 4.0 and discuss new products and services as current challenges	25 minutes for the participants to fulfill their activity (https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf) Yellow World: https://drive.google.com/file/d/1X1xXSks-H5igl6XZNiQfwwjmZohjlMp5/view?usp=sharing Red World:https://drive.google.com/file/d/1-r2rIrwREjNs6uw11FDlqd6MEXUXTrhw/view?usp=sharing Green World: https://drive.google.com/file/d/12DIpuGIy4xuYesna-jAwCDekQ7PYr_MU/view?usp=sharing Blue World:https://drive.google.com/file/d/1BQM2O7FwhU1L6ExFribP4cFPgs04J4fb/view?usp=sharing 15 minutes for the participants to join in groups of their colour and share the ideas for new businesses and products 20 minutes to present the results to the other groups 10 minutes for final discussion
15:15	Short break			
15:30	Opportunities: Organization of work ● Gap between skills needs	PPT Presentation	Participants learn new ways of organising work, seen as opportunities for change. They discuss new fields of activity,	speaker gives input via ppt presentation (40 min.) why are they doing what they doing? what are they doing? Who is using what we are doing and how? (examples of customers on a global scale)

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			qualifications and professions which implies a transformation of traditional jobs and jobs profiles in the current labor market	What topics regarding organization of work do they cover with their services (job rotation, job shadowing, job matching, working circles) strategic thought behind their work Q&A (20 min.) (directly asked by participants)
	and labour market supply and gap between skills needs and interest of potential applicants (future work force) Emergence of new fields of activity, qualifications, professions; transformation of traditional jobs/job profiles into modern jobs/job profiles and qualification in high demand.			
16:30	Opportunities: Thoughts of the participants	plenum discussion	The afternoon session ends with a discussion made by participants in order to know their thoughts and view concerning these set of opportunities described for companies in	Participants share their thoughts about the presented opportunities in the afternoon sessions

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			the frame of the 4th industrial revolution	
16:45	Wrap up and final discussion		Summary & Sharing	
17:00	End of day			

Several people and professionals support in the design and development of the training sessions, among others: guest speakers/lectures (those who do the whole presentations, in charge to provide the training input/contents); moderator/s (usually support with the introduction by the speaker, the interventions, the closure of the sessions and sometimes, with certain technical aspects…); a person who is taking care to make notes and support participants by the email (academia.info@gmail.com) and help with phone numbers; a personal technician who is in charge of recording the sessions and to split/distribute the groups in breakout rooms for the group work, etc.; a person responsible to provide links on the chat and/or other additional material, taking care of checking and answering the chat.

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4. Detailed description of the structure plan

All the material are provided via the **Moodle learning platform of Academia+ project.** More information on:
https://www.academiaplus.eu/moodle/course/view.php?id=6&section=1

The Moodle Structure

Moodle was chosen as the platform on which all the material is provided. One of the advantages of Moodle is a clearly arranged overview with which the material can be presented.

The chosen structure on Moodle follows generally the respective structure of each day of the online training. Every speaker with his or her session have their own section on the course page. You can find the presentations, videos, exercises, sample solution etc., always in the respective section of the speaker. The files you can find there are always numbered in ascending order. So the session can be worked through like a learning module. There are longer input presentations, exercises on various aspects and also smaller contributions from our speakers.

For Unit two you will find the first documents numbered 0. These are the complete presentations of our speakers from unit 2.

How to use the documents on Moodle:

The provided documents are always available as PDF files to ensure a usage on most devices. Videos are inserted as a stream directly from the Moodle page so you don't need a separate flash or media player. Sometimes we added a YouTube link on the page or on the additional material. In most cases, when our speakers have shown a video on their session, you can find this on the video (recording of the session) we prepared on Moodle. So, the external YouTube link is additional; maybe if you want to watch it again or with different subtitles. You also find the links for the YouTube videos in every presentation as you work through them.

In general, there are 7 different types of documents on Moodle.

The videos

Each session has at least one video that consists of the recording of the online training day. As these are made available directly on Moodle, every participant/ interested party can access the videos directly on the platform. No extra software or similar is necessary, so that easy access can be guaranteed.

The presentations

On every session you can find the presentation used by our speakers in the online training. Depending on whether it is a coherent input presentation or a working session with smaller input presentations, you will find one document with the whole presentation or a split presentation. These include a smaller input session from our speaker or preparations for a

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group work or an exercise. These documents are always named with 'presentation' and the specific name of this short session.

<u>The exercises</u>

In different sessions our speakers prepared some exercises and group work. These documents are named with 'exercise' and the specific name of this exercise and they contain two different didactic levels. On the one hand they are prepared for participants and interested people who want to work through the material for themselves. For those there is a small introduction into the exercise and the numbered tasks you have to do. Furthermore, there is also a note how you need to save/ share or send the outcome of this exercise. Depending on the situation you can share your screen or present your outcome or result on Padlet, Sticky notes, etc.

On the other hand, you can find a didactic level prepared for potential trainers, speakers or lecturer who want to host further education/ training, maybe in their own institution or company. For those people and for such use of the material you can find italic additional information in the exercises which are marked with 'Editorial note'. These notes include hints, tips and instructions only for lecturer or teacher. For the most part these are didactic hints or assistance, which software can be used for the presentation of the work results, etc. These notes also contain information on what needs to be prepared in advance of the session/ training. As an

example if you as a trainer want your participants to share their work results on a Whiteboard or with sticky notes, you can find a recommendation about the software we and our speakers used in the online training.

<u>The sample solutions</u>

Safeguarding of work results is extremely important for the success of a further education session/ training. When your participants come from different countries, backgrounds or at least cities/ companies etc. you will receive a huge mass of productive work results and outcome. In addition to the exercises, we provide a specific sample solution. On one side the sample solution we provided on the Moodle platform are the main work results of our participants from the online training. According to privacy policy it's needed to blurry all personal data etc. On the other side, these sample solutions are only intended as additional information. They are not all-encompassing or to be seen as the only solution of the exercise.

<u>Additional material (links, texts, handouts etc.)</u>

According to the respective session of our speakers we provided additional material like links, additional texts or handouts. If additional material be available for the specific session, it will be referred to at the respective place in the video or presentation.

Preparation before the unit:

It is important for a good start to the training, whether it takes place in presence or online, that there is enough time for getting to know each other. So, as you can see in the Moodle structure the first part of the session will be an

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introduction part where the moderator will introduce himself and give a first overview about the schedule for the session. After a short introduction made by the speaker it is also necessary to establish some rules for the session. Especially for an online training with many participants some specific rules of conduct can structure the session and thus contributes to the success. It is necessary to mute/ turn off all the microphones while the speaker is talking. Otherwise, the connection will deteriorate, background noise and any interference will cause anxiety and poor understanding. Depending on the number of participants it is also necessary to turn off the video signal while the speaker is presenting. More video signals mean more data consumption, which may affect the quality of the conference. In small groups or for group work and discussions in several groups it's useful to switch on the video signal.

While using the common platforms (Zoom, Microsoft Teams, etc.) you have two different options for asking questions while an input session. On the one hand you can use the chat. It is very helpful to collect and channel the questions during a longer input session. The questions asked in the chat can then be answered in special Q&A sessions. On the other hand, Zoom and Microsoft Teams provide different actions for participants who want to say or ask something. There is a raise your hand symbol with which you can indicate that you have a question or want to say something. The little hand will then pop up at the speaker's desktop so he knows that someone wants to say something.

The following is a detailed description of the structure plan, which provides an overview of the Unit 2: Challenges and opportunities for companies within Industry 4.0.

Introduction

Today´s learning module begins with an introduction of the facilitator and the participants and the course topic & goals. The speaker also presents the agenda for the day, and briefly discuss about the last day and mention the days and topics of the next days.

Challenges: Change and resilience to it

The following session of the online training day is entitled „Challenges: Change and resilience to it" which begins with a video about jobs of the future from the cognizant center for the future of work. The lecturer then provides an introduction to the topic.

Then follows a plenum discussion:

Moderation (1 min.): it seems that the Corona pandemic is pushing existing trends forward, trends seem to speed up especially in terms of digitalization the following ted talk covers different aspects of change in an overview (e. g. workplace/companies, health, universities) - Participants discuss some possible barriers to change and resilience to it.

Some barriers refer to the barriers to women's workforce (the Industry gender gap) which participation vary by industry and often reflect different industry cultures in addition to overarching economic and societal factors such as the dual burden of caregiving and breadwinning, unconscious biases, traditional organizational practices in the workplace, a lack of role models, confidence, etc.

Next participants watch the ted talk with Ben Pring from cognizant center for the future of jobs (18 min.):

Moderation (2 min.): quintessence: re-invent existing models in the different areas *(hint to the website* https://www.cognizant.com/future-of-work *especially the jobs of the future index - link in chat)*

Participants answer the question via Mentimeter, speaker sums up the main results of the wordcloud (10 min.)

- What barriers to change might advice seeking people have?
- What barriers to change might companies have?

After focusing on change it is time to focus on resilience to change. Speaker mention to the participants the fable of the oak and the reeds (3 min.)

A plenum discussion follows about the question:

- What does this tell us about resilience and its components? (10 min.)

Then, speaker gives short input about the results of Diane Coutu research about the 3 components of resilience: facing down reality, the search for meaning, ritualized ingenuity (10 min.)

Another plenum discussion follows about the question (10 min.):

- How can these components help to overcome the barriers to change?

Challenges: Staff and structure of the company

The next learning session aims to discuss the issue of „Challenges: Staff and structure of the company ". Participants get an overview of the segment of enterprises in Industry 4.0 – Industry profiles. After that, the lecturer gives an input to selected topics from this list via ppt presentation and he will frequently ask for questions during the presentation.

Were discussed and highlighted some challenges for the staff and the structure of the company such as: invest in a skilled workforce, training and retraining, lifelong learning, motivation of employees, etc.

Challenges: Competition

The next learning session aims to discuss the issue of „Challenges: Competition - main challenges and ways in which careers practitioners can help overcome them ".

In this session participants start by reading the introduction and the conclusion of the article (5 pages) (15 min.). Afterwards they discuss what career guidance practitioners should they keep in mind about competitive labour markets when they counsel potential employees and the possible ways career practitioners can help to overcome them (10 min.).

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The goal of this session is to show to participants how to be prepare/get an idea towards competitive labour markets and how practitioners can help to overcome them.

At the end of the session the participants are encourage to share their thoughts about all the challenges discussed during the morning sessions (5 min.).

Opportunities: New businesses/ Business models and New products/services

The afternoon session starts with the topic: "Opportunities: New businesses/ Business models and New products/services ". This session focus on new specializations leading to the creation of more and new professions, sustainability of digitalized production and work, efficiency of production by technological rationalization of workflow and improvements in productivity.

To this end, it is presented an article, followed by group work, presentation of the results and plenum discussing.

Participants learn about opportunities for companies within Industry 4.0, such as new business models that will emerge in this landscape, new professions and professional profiles, digitized production and work, etc. Next, participants discuss other possibilities for the companies within the Industry 4.0 and discuss new products and services as current challenges.

Then follows a group activity - 5 minutes for introduction and explanation of the activity (participants divided in 8 groups) 25 minutes for the participants to fulfil their activity. 15 minutes for the participants to join in groups of their colour (yellow, red, green, blue) and share the ideas for new businesses and products, 20 minutes to present the results to the other groups and 10 minutes for final discussion

Opportunities: Organization of work

The second afternoon session it's about the topic: "Opportunities: Organization of work"– this module is focused on the gaps between skills needs and labour market supply and gaps between skills needs and interest of potential applicants (future work force). The module also highlights the emergence of new fields of activity, qualifications, professions; transformation of traditional jobs/job profiles into modern jobs/job profiles and qualification in high demand.

In this sense, participants learn new ways of organising work, seen as opportunities for change. Participants discuss new fields of activity, qualifications and professions which implies a transformation of traditional jobs and jobs profiles in the current labour market.

The speaker presents topic. A PPT presentation on why are they doing what they doing? what are they doing? Who is using what we are doing and how? (examples of customers on a global scale). What topics regarding organization of work do they cover with their services (job rotation, job shadowing, job matching, working circles) strategic thought behind their work?

To close the topic follows a Q&A session (directly asked by participants).

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Opportunities: Thoughts of the participants

The last session of the day is about "Opportunities: Thoughts of the participants ". It ends with a discussion made by participants in order to know their thoughts and view concerning these set of opportunities described for companies in the frame of the 4th industrial revolution. Participants share their thoughts about the presented opportunities in the afternoon sessions in a plenum discussion.

The seminar concludes with thanks from the moderator to each and every one of the participants, lectures and experts by focusing on the highlights of the day.

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