



CONCEPT PAPER

Event:

7th German-Brazilian Dialogue on Science, Research and Innovation

Title:

WORKING AND LEARNING IN A DIGITAL WORLD

Background:

In the whole world, due to technological and process changes regarding new digital solutions, there are huge transformations and consequences in working and learning. It goes from automation with robots, passing through quick and efficient analysis done by artificial intelligence based machines until new competences needed by this recently created processes and activities, as well the new jobs required to develop all these solutions.

Another important aspect, besides looking what will be the final balance between continuously increasing and irreversible unemployment and the generation of new skilled jobs or even innovative types of working patterns, is to show recently adopted learning schemes needed not only to prepare people since childhood and basic school for these new content and working processes, but also to emphasize the importance of developing disruptive new forms of constantly learning and interacting with society.

The German-Brazilian Dialogue in this year also aims to present new challenges to state and national research and technology policies to promote digitalization processes and the development of competences needed.

When:

The conference is scheduled at the 30th (from 15:00h until 17:00h) and the 31st (from 9:00h until 17:00h) October 2018.

Where:

FAPESP Auditorium, Rua Pio XI, 1500 - Alto da Lapa - São Paulo-SP, Brazil
Room capacity: 200 persons

Organized by:

DWIH São Paulo – German Centre for Research and Innovation - São Paulo
FAPESP – State São Paulo Research Support Foundation

In Partnership with:

German Federal Foreign Office
DAAD – German Academic Exchange Service

Supporters:

TBD

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Language:

English with Portuguese translation

General Overview:

This event evaluates the quantitative and qualitative development of employment perspectives of the labor market, job losses and substitutions, with a specific focus on the impact on low-skilled jobs and the need of new competences and technical aptitudes. This conference aims to discuss new technologies and processes at companies' level and at different businesses regarding robots and men-robots-collaboration, artificial intelligence and interactive systems.

This Dialogue also includes the very important discussion on the competences needed in the near future for these different transformations on work, focusing on student-centered approaches to apprenticeship as in learning factories, maker movement, Fab Labs, vocational education and others.

It will be shown that there is no deterministic relation between the technological development on one hand and the consequences for work and skills on the other hand. Rather, the relationship between technology and work is to be understood as a political and corporate strategy design project. On the conference, instructive examples for this will be presented.

This event, therefore, addresses the challenge how to extend and use the opportunities to develop the formerly mentioned competences to all segments of society, especially to those who are being left behind and so mitigating the polarization danger (children and youth from less privileged backgrounds, older less-skilled workers, and others).

Aim:

- The general aim of this conference is to create awareness about the irreversible tendencies of new ways of working and necessary learning methodologies
- Get informed about the impact and consequences of these changes and the final balance on employment numbers

- Have a clearer and broader insight in all transformations regarding working patterns, competences and processes
- Get to know new forms and alternatives of work design and methods of competences development
- Understand new needed competences, innovative learning methods and inclusion activities of all segments of the society
- Contribute to the Brazilian discussion on a national research and technology policy to promote digitalization processes and the development of competences
- Present and discuss newest scientific results, developments, and best practices
- Have some real-life experiences during the event of the presented digital, robotic, interactive and virtual concepts, regarding working and learning aspects
- Promote individual related discussions in both countries
- Establish a dialogue between German and Brazilian scientists
- Strengthen the German-Brazilian cooperation through new collaborative research projects
- Identify new approaches to cooperation between the two countries

Format

The conference will consist of two main panels on the topics “Working in a Digital World” and “Learning in a Digital World”, each one with sub-sessions related to the mother issue. After an Opening Session, there will be two Keynote Speakers starting the discussions about the German and Brazilian specific tendencies of the working and learning scenarios. At the end of the conference, there will be another session about relevant national research and technology policies to promote digitalization processes and the development of competences.

Funding

Funds for the German speakers will be financed by the DWIH and for the Brazilian speakers of the State of São Paulo by FAPESP.

Agenda

A. Introduction Session

Theme: *The Challenges and Changes in Working and Learning in a Digital World*

B. Panel 1: Working in a Digital World

Session 1.1

Theme: *Main Technological Trends Affecting Work and Jobs*

This session discusses new technologies and processes at companies' level, highlighting some disruptive and comprehensive ones, like robotics and artificial intelligence. These will affect dangerous, low-skilled, repetitive, clerical, logistics, services, searching, mining and interactive activities. Examples will be done in production, health and clerical environments.

Session 1.2

Theme: *Structural / Qualitative Development and Organization of Labor*

This session approaches structural and qualitative development and organization of work, as well new forms and design options of work organization at the company level. The recognized and effective German technical workforce (the so-called "Facharbeiter") will also be included as an aspect in this changing environment.

Session 1.3

Theme: *Different Perspectives of Employment Development*

This session evaluates the quantitative and qualitative development of employment perspectives of the labor market, job losses and substitutions, intra- and intercountry transfer, informal activities, skill gaps etc., due the increase of automation and robotization, product customization, artificial intelligence based tasks, with a specific focus on the extinction of low-skilled jobs and the need of new capabilities and technical aptitudes (in many cases, not yet existing).

C. PANEL 2: Learning in a Digital World

Session 2.1

Theme: *Needed Interchangeable and Soft Skills in a Digital World*

This session focus on the so-called "higher order cognitive skills", i.e., those that can be transferred more easily from one occupation to another (math, logic, critical thinking, complex

problem solving and reasoning), as well the so-called "soft skills", i.e., those required for working in a diverse ever-changing work environment (empathy, leadership, teamwork, conflict resolution, relationship management, and also, creativity, innovation and curiosity).

Session 2.2

Theme: *Teaching and Learning Methods to Build-up New Skills*

This session focus on student-centered approaches to learning as in learning factories, maker movement, Fab Labs, the German experience of vocational education etc. Attention will also be given to the role of the web and web-based content offerings. If at all possible, it could be interesting to explore the contemporary knowledge basis of this approach, especially in the neuroscience field. Also, innovative ways of necessary continuous and dynamic learning processes and methods during the occupation history will be highlighted.

Session 2.3

Theme: *Learning for all Distinct Age, Skill, and Social Groups*

This session addresses the challenge how to extend the opportunities to develop the formerly mentioned skills to all segments in society, especially to those who are being left behind and so mitigate the polarization danger (children and youth from less privileged backgrounds, older less-skilled workers, and others). The topic could be developed from a more analytical perspective or a more practical case-based perspective, or both.

D. Final Session

Theme: *National research and technology policies to promote digitalization processes and the development of skills*

This final session discusses the relevant topics national research and technology policies should focus on to promote the development and diffusion of digital technologies. Also the measures which are necessary for this will be discussed. Therefore, the session will refer to previous experiences with and concepts of technology policy in Germany and in Brazil and will discuss new approaches of cooperation between the two countries in the field of research and technology policies.