



## PAPER SUMMARIES AND SHORT BIOS

### Keynote speaker

#### Philipp Gonon



Philipp Gonon is Professor em. of Vocational Education and Training at the Zurich

University. He received his M.A. and Ph.D. from the Universities of Zurich and Berne respectively. After his habilitation at the Institute of Pedagogy of the University of Berne, he served from 1999 until 2004 as a Full University Professor of Vocational and Further Education at the University of Trier in Germany. Since 2004, he has taught at the University of Zurich, Switzerland. From 2016-2019 he was the director of the Institute of Education. Since January 2021 he is retired.

Internationally Philipp Gonon is known for his comparative research on the German dual system, the Swiss VET system and on theory and history of vocational education.

### Paper presentations – day 1

#### Learning venues and sustainable development

The contribution discusses the design of learning venues in apprenticeship programmes with a view to the development of sustainable-oriented professional competence. This term is used as an umbrella term for the knowledge and skills that are needed in the world of work in order to enable a sustainable way of life on the basis of an eco-friendly 'green' economy. Like any other aspect of professional competence, sustainability-oriented competence or green skills for the world of work need to be developed in the course of VET programmes such as apprenticeship, which begs the question how the relevant learning venues, especially at the training enterprise, should be organised so as to facilitate the acquisition of the skills in question. The aim is that learners are able to think and act responsibly in the sense of sustainability, which of course also requires appropriate scope for action.

The paper presents the findings of recent research on the sustainability-oriented design of learning venues in Germany against the backdrop of the European and international discourse on education and training for the green economy. The paper is based on the results and findings from the pilot projects and scientific monitoring on 'Vocational Education and Training for Sustainable Development' (BBNE) which were supported by the Federal Institute for Vocational Education and Training (BIBB) with funding

of the Federal Ministry of Education and Research (BMBF). The results on sustainable learning venues, including a proposal for indicators for the description and design of the latter, are based on the work of the scientific monitoring by the Research Institute for Vocational Education and Training (f-bb). The analysis takes the characteristic feature of German apprenticeship programmes, namely the duality of learning venues (training enterprise and VET school) as point of departure. It is argued that the sustainability-oriented design of learning venues requires a holistic organisational development approach. A four-level framework for the design of sustainable learning venues is presented, and potential indicators for each of the levels are suggested.

### **Heiko Weber**

Heiko Weber works as a project coordinator at Forschungsinstitut Betriebliche Bildung (f-bb) | Research Institute for Vocational Education and Training in Germany. He studied in sociology and education. He has many years of experience in Educational research and especially in the field of vocational education and training (VET). Important topics in recent years: educational policy in the EU and Germany, implementation of the EQF in Germany, quality in VET and work-based learning, education for sustainable development. In addition to research, he advises ministries, authorities, associations, companies and educational institutions.

### **Wolfgang Wittig (co-author)**

Dr Wolfgang Wittig is a research associate at f-bb. He holds a doctorate in political science, a 'Magister' degree in public management and an M.A. degree in philosophy. Prior to joining f-bb in 2015 he has worked as a researcher in the department for international VET research at the Institute Technology and Education (ITB), University of Bremen since 2004 and was involved in about 20 European projects on various aspects of VET such as transfer and recognition of vocational learning outcomes, governance of apprenticeship, and VET teachers and trainers. He also carried out several evaluation studies on VET policies and programmes.

## **Reskilling for a green transition**

The EU has adopted a series of policies to position itself as a global leader in shifting to a green economy, most recently the European Green Deal or the Fit for 55 Package. These policies will affect industries, value chains and ultimately workers. Besides offering monetary compensation (e.g. Just Transition Fund), negatively affected workers will have to be supported in moving from declining to growing occupations to manage this transition. Apprenticeships and retraining (lifelong learning) schemes will need to emphasize the skills that are central to the green economy to facilitate this transition. In order to do so and redesign these schemes appropriately, policymakers need three key pieces of information. First, in-depth knowledge about the expected growth and decline of different occupations in a green transition is necessary. Second, an understanding of the skills that are associated with these occupations. Third, knowledge about the likely unequal geographical distribution of affected jobs across the EU to identify problem zones and potential (re-)training bottlenecks.

To fill this gap, this paper proposes a framework for analysing skills changes. Introducing the skills delta framework, we consider geographical and labour market granularity to structure the findings. At the industry level (low labour market granularity), classifications are not tailored to represent a green economy. At the occupation level (mid labour market granularity), taxonomies are not sufficiently differentiated between green and brown activities. At the skill level (high labour market granularity), preliminary analyses highlight the importance of core skills (defined as coreness in skills network) for helping workers transition from brown to neutral or green occupations. Finally, regarding geographical granularity, we find that empirical approaches are currently limited to global and national levels (low and mid geographical granularity). Given the spatially concentrated nature of industrial decline, moving to higher geographical granularities (regional or even individual) is paramount. Granular knowledge about the effects of the green transition is crucial for guiding policymakers and can provide a basis for designing green apprenticeship programs and expanding apprenticeship programs to cover mature workers.

## Florian Egli



Florian Egli is a Senior Researcher and a Lecturer at ETH Zurich and an Honorary Research Fellow at the Institute for Innovation and Public Purpose (IIP) with Prof. Mariana Mazzucato. His research focuses on climate and renewable energy finance with a particular emphasis on the role of public policy worldwide. His dissertation titled "The role of finance in mitigating climate change: Insights for public policy" won an ETH medal and the doctoral thesis award of the Swiss Association of Energy Economics (SAEE). He is a senior associate with foraus, the Swiss foreign policy think-tank and an executive board member of the Swiss Young Academy.

## Simon Schmid



Simon Schmid is responsible for SkillLab's work in the Public Sector. Simon is an expert in the field of skill development and anticipation and joined SkillLab after five years at Ernst and Young. Before joining EY he was at the Center for Transatlantic Relations at Johns Hopkins University's School for Advanced International Studies. He holds a Masters in International Relations and Economics from Johns Hopkins SAIS.

## Felix Zaussinger

Felix Zaussinger is a second-year graduate student in the ETH Zurich Science, Technology & Policy programme. He is currently conducting his master's thesis research on the importance of reskilling for the European green transition at the ETH Energy & Technology Policy group. Felix holds a bachelor's degree in Geomatics Engineering from TU Wien, Austria.

## Upeksha Amarasinghe

Upeksha Amarasinghe is a Senior Data Scientist at SkillLab where she analyzes labour market information to understand how job-seekers can best represent their skills in order to overcome barriers to accessing and navigating the labour market. She holds a Bachelor of Science in Mathematics and Economics from the University of Toronto.

## Ulrich Scharf

Ulrich Scharf is the Managing Director of SkillLab and a serial social entrepreneur. SkillLab's solution enables employment services and training providers on three continents to deliver skill-based career orientation remotely and at scale. The Amsterdam-based social startup develops an AI-driven solution empowering people to turn their skills into careers. Prior to SkillLab, Ulrich has been the Director of Product & Data Analytics of the Global Real Estate Sustainability Benchmark, which is used to evaluate 6.4 trillion USD annually. He holds a bachelor and Master degrees in Economics from Maastricht University.

## Tobias Schmidt

Tobias Schmidt is Associate Professor of Energy and Technology Policy at ETH Zurich. In his research, he analyzes the interaction of energy policy and its underlying politics with technological change in the energy sector. His research covers both developed and developing countries. Tobias holds a Bachelor of Science and Dipl. Ing. (MSc equivalent) in electrical engineering (energy focus) from Technical University Munich and a PhD from ETH Zurich in management, technology, and economics. Before taking up the professorship, he did a PostDoc at ETH and as a visiting scholar at Stanford University's

Precourt Energy Efficiency Center and acted as consultant to the United Nations Development Programme (UNDP).

## Green apprenticeship as systemic change agent for green and social transition in Europe

The starting hypothesis of the presented study is that apprenticeship in the eco-system of Green Transition becomes a change agent within VET systems and, from the perspective of society as a whole, for the neighbouring social systems if the approach to apprenticeship is designed in an appropriate way. The criteria of the European framework for quality and effective apprenticeship (EFQEA) can offer a development basis for that design. They have to be reflected and adapted to the specifics of the eco-system of green transition. On the background of experiences and results in the BMBF funded Greek-German cooperation project GRÆEDUCATION we show that the characteristics of this eco-system generate transformational power. In combination with the specific interaction system of apprenticeship

(in comparison to other forms of learning), this transformation impulse can lead to innovation processes in the entire VET system and in related social systems. These processes are described within the framework of the pilot project that helps to outline a transformative process model that can be adapted to other European countries.

The presentation highlights the methodological approach of the study and the project, shows the transformation dimensions on the basis of some EFQEA criteria, generates a model for the transformation process and illustrates the implementation on the basis of the case study.

### **Silke Steinberg, M.A.**

Silke Steinberg is one of the directors of FIAP. Since 2010, she has been coordinating the area of international cooperation and innovation management in vocational training, migration and new skills in the sustainability economy at FIAP. For some years now, the focus has been on social and ecological transition, social entrepreneurship and start-up support in the green economy.

Silke Steinberg previously headed an institute for transcultural competence development for 17 years and worked there with internationally active companies and with educational organisations.

Current research topics (among others):

- Transcultural work, transcultural communication
- International VET cooperation in the field of green skills
- Innovation management in VET systems
- Design of transformation processes in ecological change
- Modelling participatory exchange processes
- Participatory development of services
- Entrepreneurship

### **Dr. phil. Rüdiger Klatt**

Dr. Rüdiger Klatt has been the institute director of FIAP (Gelsenkirchen) since 2010, and has been researching and publishing in a responsible position since the 1990s on issues of innovative work design and prevention, digitalisation of the world of work, service development and vocational training.

Current research topics:

- digitalisation and virtualisation of work
- demographic change in the knowledge economy
- flexible work and discontinuous employment biographies
- Concepts of preventive occupational health and safety in the knowledge economy
- Development of new educational services

Concepts of sustainable mobility in local areas

## Paper presentations – day 2

### Siemens Professional Education (SPE) goes Green Skills

For customers and society, Siemens needs new skills to prepare apprentices and dual students as well as adult learners in upskilling and reskilling programs for the green transformation. Existing apprenticeships and occupations will not become obsolete. However, they will have to be adjusted and complemented by new skills and a new mindset.

Most important success factors in the process of developing a green skillset and respective new training elements have been:

- Dynamic and fast trend scouting with an up-to-date innovation radar and short access to strategy adjustment
- An innovation initiative bringing the right business experts together to make use of their customer and use case knowledge
- An education expert team to identify the right occupations, modules and formats of new learning content and training in the apprentice, dual student curricula and reskilling/upskilling endeavors
- An innovative format including project design and interactive elements to motivate apprentices and thus, to contribute to a real mind shift at participants

From Siemens perspective, sustainability, circularity and the green transformation of businesses, education and – consequently – apprenticeships will be a long-term trend with high impact and world-wide validity.

In parallel, energy technologies, IoT and digitalization are developing fast in the 4<sup>th</sup> digital revolution. Therefore, development of respective apprenticeship trainings in view of sustainability and circularity will not be finalized but will have to be continuously monitored and updated.

This will be a relevant corporate learning strategy to ensure that new skills for apprentices and dual students will contribute to the green transformation not only for Siemens, but also to the benefit of all relevant stakeholders and society as a whole.

#### Barbara Ofstad



Barbara Ofstad is a German citizen holding an MBA in International Management from Monterey Institute of International Studies (USA) and two Bachelors in European Management from ESB Reutlingen (Germany) and ESC Reims (France). Ms. Ofstad has more than 20 years of industry experience in Germany and the U.S, where she worked in various marketing, product management and software development management positions in the healthcare industry. In 2015, she changed into the human resources domain. Since 2017, she has been responsible for Siemens Professional Education in Germany with business operations currently catering for 4,000 apprentices/dual students in 20 training centers. Ms. Ofstad serves in various employer associations' vocational education boards (VDMA, VhU, BDA). She is a member of the board of trustees of the Fraunhofer Institute for Industrial Mathematics ITWM, Kaiserslautern (Germany).

#### Stephan Szuppa

Dr. Stephan Szuppa is Innovation Manager at Siemens Professional Education headquarters. Within PLM Team, he is responsible for analyzing trends and setting up initiatives. He further ensures that actual technology and business trends are covered in educational



trainings for apprentices, dual students and reskilling/upskilling trainings for colleagues.

He owns two engineering degrees and a doctoral degree and started his career at Siemens in Technical Sales for Smart Buildings. Later he developed an Innovation and Competency consulting team at Siemens Corporate Technology, Munich and managed projects in Asia, Europe and U.S. He serves in various industrial and academic associations such as VDMA working group Future Business and as Board member of VWI, 'Verband Deutscher Wilng'. Since 2020, he has been working as Professor at International SRH University Berlin and has established a successful Master Program for International students – M.Eng. in Sustainable Technology Management.

In this role he recently Co published the white paper: 'Future Skills for EU Green Deal' together with EIT Manufacturing, EIT Inno Energy and EIT ClimateKIC.

### **Christina Hees**



Global Product Manager for business education, training processes and projects at Siemens Professional Education Headquarters. She has been strategically responsible for commercial training at Siemens AG and has led major projects in the education and training sector. Initially, after completing her Bachelor's degree in Business Administration, she has acquired a wide range of specialist and management skills through various positions at Siemens AG over the past 10 years. Her personal passion to purposefully advance and implement projects is not only exercised in her professional life but also in several other in-service training courses (e. g. MBA in Human Capital Management, Business Coach) and her private life with sports.

## **Apprenticeships for a greener labour market**

The transition to a low-carbon, resource efficient and green economy can only be made by developing the right skills, knowledge and competencies. Both the Paris Agreement and the European Green Deal therefore recognize that green skills development is an indispensable pillar to achieve the transition to a sustainable society. Initial education certainly has an important role to play to equip students with the necessary knowledge, skills and attitudes to contribute to the green transition but this influx of 'green skills' on the labour market will not be sufficient. The current workforce will also have to make efforts as upskilling and reskilling are essential (1) to either equip workers with the skills they will need to perform their job in the future and/ or(2) to support employee mobility across jobs and sectors. This paper looks at how apprenticeships can play a major role in upskilling and reskilling workers in green themes as well as in allowing students in initial VET to acquire green skills in a hands-on way. A case study on the greenification of a seven-day training module for both students and employees in the chemical sector combined with several interviews is used to identify the barriers and leverages for teaching green skills and how apprenticeships can play an important role in teaching green skills. The paper concludes with several policy recommendations.

### **Helena Van Langenhove**



Helena Van Langenhove is policy officer at the Department of Work and Social Economy (Flemish Government). She previously worked at the OECD, in the national skills strategy team. She obtained a master's degree in Economic Sciences (2017) at Ghent University, supplemented by a master's degree in Public Policy & Human Development (2019) at Maastricht University.

### **An Katrien Sodermans**



Dr. An Katrien Sodermans is head of the research & evaluation team within the policy unit at the Department of Work and Social Economy (Flemish Government). Previously, she was head of the knowledge center at SYNTRA Flanders. In this role she built up substantive expertise in dual learning, entrepreneurial training and lifelong learning. She was also a member of the 'Cedefop community of apprenticeship experts'. Before her positions at the Flemish Government she worked as a researcher at The Katholieke Universiteit Leuven where she obtained a PhD in Social Sciences in 2013. An Katrien completed her master's degree in Occupational and Work Psychology in 2006.

### **Frederick Van Gysegem**



Dr. Frederick Van Gysegem is partner at Roland Berger, a global strategy firm, where he advises key decision makers on strategic topics (mainly in the public and financial sectors). In his earlier career, he developed deep functional expertise in workforce transformation and is a regular adviser to governments, agencies, human resources service providers and sector associations on labour-market topics. Frederick completed his PhD in Economics at Ghent University in 2013 and was a visiting researcher at Queen's University in Belfast. Prior to joining Roland Berger, he worked in asset management and for governments. He also holds master's degrees in Economics, and in Banking and Finance.

### **Sarah Pascal**



Sarah Pascal is project officer at the technical training centre ACTA located near Antwerp. She guides and promotes digital projects for industry and education, designs innovative trainings and coaches trainers. Previously she worked several years as a teacher, educating different subjects to students from 6 to 66. She obtained a bachelor's degree in education (2013), complemented by a bachelor's degree in business management (2015) at the Artevelde college in Gent.

## **Vocational education and training in construction: low road or high road approaches to apprenticeship?**

The built environment is responsible for 40% of energy consumption and 36% of energy-related CO2 emissions in the European Union (EU) so that the aim to become zero carbon implies a transformation of the construction industry and construction vocational education and training (VET) and apprenticeship systems across Europe. Nearly zero energy building (NZEB) require the training of

millions of construction workers, a different construction process and a significant upgrading of existing VET systems. The imperative of equipping the construction workforce with appropriate knowledge, skills and competences is an integral part of EU green transition policy for the built environment. The complex technical and social challenges confronting construction VET systems, above all apprenticeships, throughout Europe and the constraints involved in addressing these are the focus here.

As apparent from the European Commission's Build-up Skills initiative, successful NZEB depends on co-ordination and overall project awareness, teamwork and applying theoretical knowledge to particular circumstances. This requires an energy literate workforce, with broader and deeper theoretical knowledge, higher technical and precision skills, interdisciplinary understanding and a wide range of transversal competences. Broadly-based VET and apprenticeship systems represent the 'high road' to energy efficiency in buildings and are best placed to respond to the challenges. In contrast, those based only on learning outcomes and targeting specific skills can lack the depth needed to develop NZEB expertise in the workplace and represent the 'low road'. The paper highlights the strengths and weaknesses of different systems and different strategies advanced to incorporate LEC elements, with examples from Belgium, Germany, Ireland and England. It is argued that a 'high road' approach, encompassing a broad concept of agency, successfully addresses NZEB requirements whereas a 'low road' approach represents an instrumentalist approach to labour that jeopardises the achievement of higher energy efficiency standards.

### **Linda Clarke**

Linda Clarke is Professor of European Industrial Relations at the University of Westminster, Co-director of the Centre for the Study of the Production of the Built Environment (ProBE). She has extensive research experience on labour, labour history, low energy construction, equality and diversity, vocational education and training, climate change and just transition, wage relations and employment, with a particular focus on the European construction sector. She was, with Christopher Winch, involved in the European Commission construction social partner project, Inclusive Vocational Education and Training for Low Energy Construction (VET4LEC) and is currently participating in a project of the Canadian Building Trades Unions to embed climate literacy into the building trades, including good practice examples from across Europe.

### **Christopher Winch**

Christopher Winch studied Philosophy at Leeds, receiving a PhD from the University of Bradford. From 2008 until 2012, he was Head of the Department of Education and Professional Studies at King's. He worked in further, primary and higher education in England and Wales before coming to King's in 2004. Chris is a philosopher of education whose current interests include professional knowledge and judgement, comparative vocational and professional education and the philosophy of educational research. He is involved in the Future of VET in Europe project and in the King's team researching the transitions of the 50% of young people in England not intending to go to university.

## **Panellists – 22 October 2021**

### **Pär Lundström**



Pär Lundström is a Senior Policy Advisor of Skills Provision for Climate adaptation and has worked in this capacity with The City of Stockholm, The National Administration of Education and currently at The Swedish Installation Federation, which organizes companies that install, optimize and control heating, ventilation, water, electrical and telecommunications technology. Pär Lundström is also involved in the #skills4climate campaign which champions accelerated skill development to fulfill the climate ambitions. He also represents The Swedish Confederation of Enterprises at The Governing Board of Cedefop. He has a degree in political science from Uppsala University.



### Isabel Sobrino Maté



Isabel Sobrino Maté is since 2016 Ceemet's policy coordinator for education, training and employability related topics as well as for social dialogue and industrial relations.

Within Ceemet, Isabel leads the work on education, training and skills policies. This vis-à-vis the European institutions as well as industriAll Europe, Ceemet's trade union counterpart.

With a background in associations, Isabel brings a broad range of experience in how the European institutions work and interact.

Isabel holds a degree in law (Universidad Autónoma de Madrid) and a master's degree in international politics. She speaks French, English, Spanish (mother tongue) and Portuguese.

### Thomas Giessler



Thomas Giessler is head of the Unit Vocational Education and Training Policy at the Confederation of German Trade Unions (Deutscher Gewerkschaftsbund, DGB). DGB is the national umbrella organization for eight German trade unions with more than six million members. Giessler represents the trade unions on the main committee of Germany's Federal Institute for Vocational Education and Training (BIBB) and on several of the Institute's subcommittees and policy.

He was also Chair in the Working Group of the BIBB Board which new training standards drawn up by a will apply to all training occupations entering into force as of 1 August 2021. One of these encompasses the topic of environmental protection and sustainability.

Giessler is a brewer by dual training.

### Corinna Zierold



Corinna Zierold is Senior Policy Advisor at industriAll European Trade Union. Her main areas of responsibility include Just Transition in the different industriAll Europe sectors and industriAll Europe's work on energy and industrial policy. She is closely coordinating the work on Just Transition with ITUC, the Just Transition Center and ETUC. Corinna has started her professional experience with the European Mine, Chemical and Energy Workers Federation in 2008 and has been working with industriAll Europe since its founding congress in 2012. Her previous tasks included the coordination of European Sectoral Social Dialogue in the gas, extractive industries, electricity and paper sectors. Moreover, she has closely worked with trade unions in South East Europe on organisational development and industrial policy in cooperation with EFFAT, IUW and Friedrich Ebert Foundation. Corinna holds a Masters' degree in European Studies from the University of Leipzig in Germany.

### Bill Mundy



Over the past 20 years Bill has held management & executive positions in Public, Private and Non-for profit organisations across Communications, Manufacturing, Consulting and Training. This has enabled him to build a strong knowledge base across these sectors which has been complimented with post graduate studies.

Bill has been with Federation University for 5 years and is responsible for the growth, development aspirations of the University's VET/TAFE operations. He has a strong sense of community and has enjoyed serving on a number of Ballarat community committees over many

years holding key positions which has contributed to his well-grounded career.

### **Annabel May**



Annabel May is currently working as a Level 3 Business Administration Apprentice at New Schools Network. She work across different areas of the company including: HR, Finance, Cyber Security and External Relations.

In her spare time, she volunteers for a number of organisations including NSoA (The National Society of Apprentices) and OBESSU (The Organising Bureau of European School Students Union), to further raise awareness of the important social issues young people are facing today. Some of which include the importance of sustainability within apprenticeships, ensuring a greener and prosperous future for all.

She will be speaking about some of the current issues that apprentices, like herself, face and ways in which we can alleviate some of the issues.