Possible future scenarios of non-formal and informal learning in relation to recognition and validation of prior learnings[1]

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1. Introduction

Due to several and rapid changes and developments that have taken place since the 1990s in social, economic, environmental, and technological areas, the world is becoming more volatile, uncertain, complex, and ambiguous. Education is considered as a key for dealing with these complexities and uncertainties. Thus, there has been a growing concern, at the global level, regarding complex relationships between these global change trends/challenges and education and tailoring education. Several sets of change trends and challenges have been listed in different reports/studies by global actors such as OECD, UN, WB and WEF (see World Bank, 2019; World Economic Forum, 2018; OECD, 2019; UN, 2021). All these reports and studies aim at creating a realistic image of the future based on the projections in different aspects of life especially regarding the future of work and the future of education. Despite the use of different categorizations or terminology, these trends can be summarized as follows (which is not an exhaustive list): social (increased life expectancy, ageing society, expansion of education, increased migration and multicultural social structures with increased diversity, increased social inequalities): environmental (climate change and exploitation of natural resources, new energy sources); economic (changing work structures, innovative and flexible business organizations; emergence of new production forms and products and emergence of new sets of skills and skill ecosystems; financial interdependency at the global level; shifts in global economic distribution); technological (digitalization, bio-technology, artificial intelligence and machine learning, robotics, new materials and wearable technology). These trends have an impact on where we learn and how we learn, and the learning contexts and spaces have widened going beyond schools and formal education. Learning can happen almost anywhere, any place, anytime. Different forms of learning allow achieving the learning outcomes needed to cope with challenges and situations faced in everyday life, at the workplace

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and in society at large. In this environment, non-formal and informal learning have gained momentum and will most likely play a growing role in the future (Redecker, 2014; EC, 2018b).

In this chapter, we adopt the European Council's (2012) definition of non-formal and informal learning identified in recommendations on the validation of non-formal and informal learning. Non-formal learning takes place through planned activities (in terms of learning objectives, learning time) where some form of learning support is present (e.g., student-teacher relationships). Very common cases of non-formal learning include in-company trainings, e.g., structured online learning (e.g., by making use of open educational resources), and courses organized by civil society organizations for their members. Informal learning results from daily activities related to work, family or leisure and is not organized or structured in terms of objectives or learning support. It may be unintentional from the learner's perspective. Examples of learning outcomes acquired through informal learning are skills acquired through life and work experiences, project management skills or ICT skills acquired at work, languages learned during a stay in another country, cultural activities, youth work or learning through activities at home.

Non-formal education has a strong tradition in Europe (Colley et al., 2006) which has been recognised both by the civil sector and policies at the national and European levels. The EU has developed a comprehensive educational framework in the last decades on different types of learning and provided the policy context that supports non-formal and informal learning as well as lifelong learning as a key to deal with the social demographic and economic challenges. This framework is based on three pillars or key policy issues: key competencies and skills; qualification frameworks based on learning outcomes; and validation of non-formal and informal learning. Validation, recognition, credit transfer and qualification frameworks create a permeable education system. It is underlined that "[p]ermeability must enable learners to transfer and build on all types of their prior learning – formal, non-formal or informal – wherever that learning took place, at school, work or during leisure" (CEDEFOP, 2012, p. 2).

Europe has been a pioneer in permeability, especially with the development of the National Qualification Frameworks (NQF) and the European Qualification Framework (EQF) and in transfers from Vocational Education and Training (VET) systems to academic higher education. "Formalising the informal and non-formal" and making all learning visible have been on the EU agenda and several steps have been taken to create a better system for a Europe-wide systematic framework that works hand in hand with the development of NQF and national competencies (Harris, 1999, p. 124).

Within this increased scope for mobility, validation plays a crucial role in paving pathways to education, training, and qualifications; promoting workforce development and participation in the labour market; enhancing social inclusion and democratic citizenship; and personal and professional empowerment (Singh, 2015, p. 63). This is also important for professional areas such as youth work which contributes significantly to the learning context in Europe.

The aim of validation of non-formal and informal learning is to make "learning visible" and recognizable regardless of the learning context (Souto-Otero, 2016, p. 3). CEDEFOP (2015) defines validation as a "process of confirmation by an authorized body that an individual has acquired learning outcomes measured against a relevant standard. It consists of four distinct phases:

- Identification of an individual's learning outcomes acquired through non-formal and informal learning;
- Documentation of an individual's learning outcomes acquired through non-formal and informal learning;
- Assessment of an individual's learning outcomes acquired through non-formal and informal learning;
- Certification of the results of the assessment of an individual's learning outcomes acquired through non-formal and informal learning in the form of a qualification, or credits leading to a qualification, or in another form, as appropriate." (CEDEFOP, 2015, p. 14).

At the European level, several initiatives have been launched in the past 20 years to support non-formal and informal learning, and to promote its validation and recognition. The European Qualification Framework, the Europass and the validation process scheme for non-formal and informal learning can be mentioned here as significant milestones, while following documents laid the base for validation and recognition of non-formal and informal learning in EU:

- European guidelines for validating non-formal and informal learning (2009, 2015)
- European inventory on validation of non-formal and informal learning (2010, 2014, 2016)
- Revised Recommendation on Criteria and Procedures for the Assessment of Foreign Qualifications, adopted by the Lisbon Recognition Convention Committee (2010)
- Recommendation CM/Rec 2 of the Committee of Ministers to member states on validating migrants' skills (2011)
- Council Recommendation on the validation of non-formal and informal learning (2012)
- Recommendation on the use of qualifications frameworks in the recognition of foreign qualifications, adopted by the Lisbon Recognition Convention Committee (2013)

Within this perspective, this chapter aims at investigating the trends and drivers for the future of informal and non-formal learning with a special focus on role of recognition and validation of prior learnings in the future scenarios of non-formal and informal learning. It provides an educational policy perspective. This chapter is based on a study conducted within a European project aimed at plotting some possible and probable scenarios for evolution of non-formal and informal learning in 2030 based

on the threats, risks, chances, and opportunities in relation with different social, economic and technological trends following a mixed method foresight study design. Study was conducted with the lead of Austrian Institute of Technology in cooperation with Danube University Krems in 2019.

2. Methodology

A mixed method approach was utilized to collect data and to form the scenarios. In the first stage, an in-depth desk research concerning the future of non-formal and informal learning was conducted. A horizon scanning approach served as the framing to identify those trends and drivers that will have a potential effect on different forms of learning. The documents used as sources covered the literature strand on non-formal and informal learning, on education policy and foresight and forward-looking studies. From a corpus of about 300 sources, the first scanning filtered 81 documents that were analysed in more detail for drivers and trends pointing towards a time horizon of 2030. Our analysis included potential challenges, opportunities, threats, weaknesses, wild cards, and weak signals. The findings were then structured according to a STEEP (society, technology, economy, education, policy) analysis classifying education as single category, too.

From this analysis, 50 trends and drivers in five dimensions: digitalisation, society, economy, education (learners, demand, institutions, trainers), and policy were identified. As a second step, these 50 drivers and trends were reviewed by the researchers and those items with the highest impact and highest uncertainty at the same time was chosen to include in the expert survey.

25 items were included in the expert survey. Megatrends and related trends which usually are considered as highly likely to have an impact were not included in the survey. The purpose of the survey was to assess the impact of various trends and drivers on the possible evolvement of non-formal and informal learning for education (scale: no/very little impact, some impact, strong impact, very strong impact). In addition, the respondents were asked to assess their confidence about their assessment (scale: uncertain, certain).

Data was collected with an online survey which ran from mid-June until mid-July 2019. We contacted 741 experts from different organisations in European countries were contacted for the survey. The experts group include teachers, school administrators, representatives from intermediaries, education researchers, foresight experts and policy makers. In total, 201 experts answered the questions about the future of learning. Figure 1 and 2 present the nationalities and professions of the survey participants. As the project coordinator is from Austria, there were higher number of experts from Austria, but still we could reach majority of the European countries. More than half of our experts are educational researchers and lecturers at the higher education institutions.

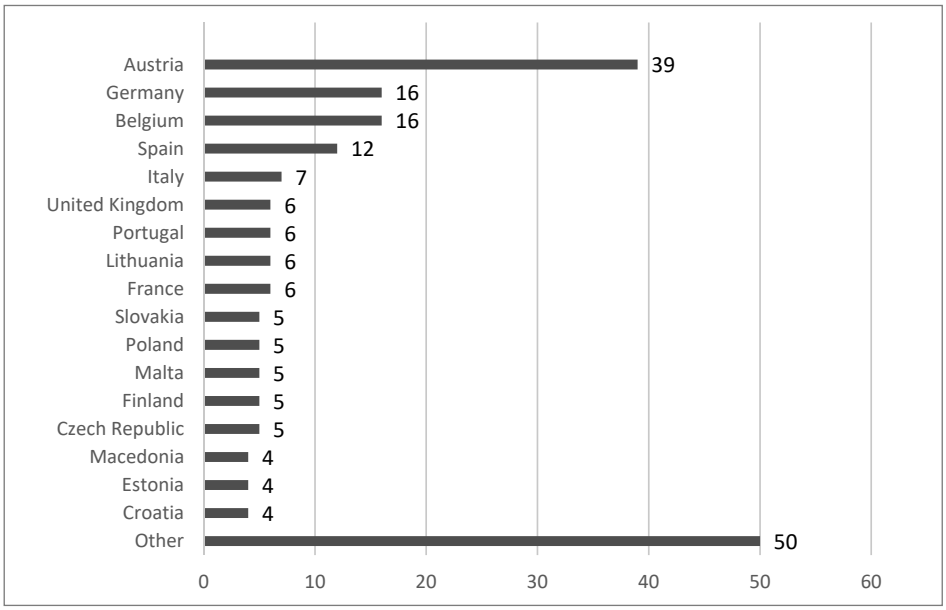

Fig. 1: Respondents of the survey by country (n=201)

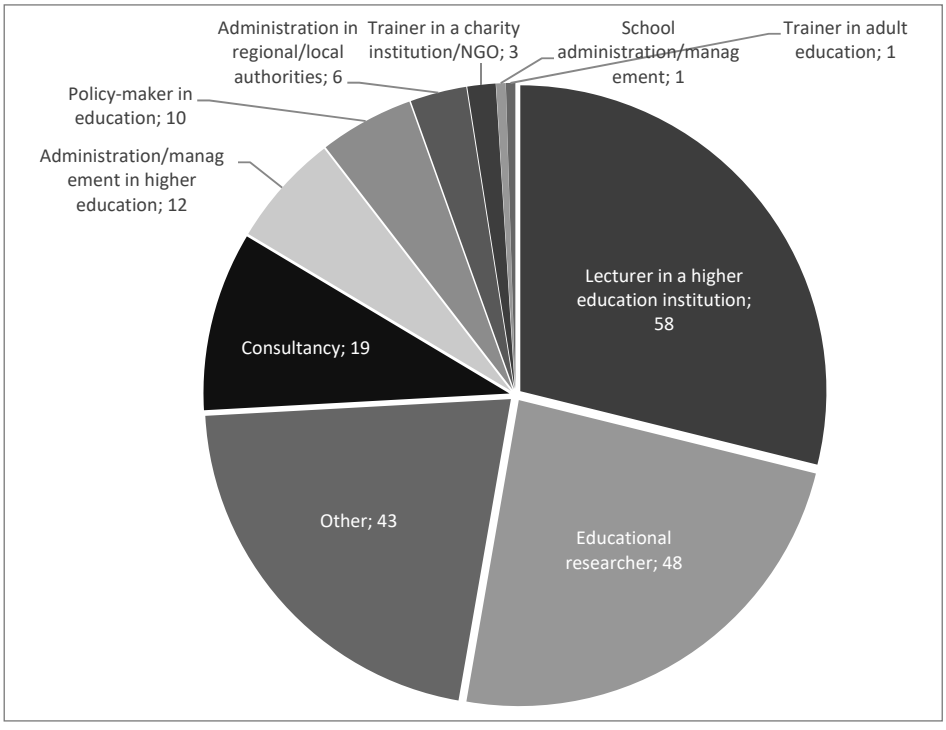

Fig. 2: Respondents of the survey by occupation (n=201)

3. Results

The assessment of the impact and uncertainty allowed ranking the trends and drivers which served as base for the selection of trends and drivers for the construction of the scenarios. Based on this ranking of the trends and drivers, we selected seven trends (mainly those with a high impact and at the same time a high uncertainty) for the construction of a set of scenarios integrating factors from different dimensions. Table 1 presents the trends and drivers as well as the scoring from the experts.

Tab. 1: List of trends and drivers with uncertainty and impact values

		Score		Impact (%)			
No.	**Drivers and trends**	**Uncertainty**	**Impact**	**Very strong**	**Strong**	**Some**	**Little**
DIGITALISATION							
1	Increased use of digital technologies (e.g. webinars) for learning	0.100	0.721	38%	41%	21%	0%
2	Digitalisation will require high competencies (e.g. critical analysis) not provided by institutions focusing on formal learning	0.433	0.579	20%	39%	36%	5%
3	Digitalisation will require highly specialised skills inspired by the collaboration of human and machines	0.300	0.661	25%	50%	23%	2%
SOCIETY							
4	Growing inequalities in learning participation (social origin, migration, vulnerable groups)	0.224	0.656	23%	52%	23%	2%
5	School drop outs, truancy and causes (families in crises, caring children etc.)	0.439	0.541	12%	45%	37%	6%
6	Dissolution of boundaries between work, learning and life	0.252	0.709	36%	42%	22%	1%
ECONOMY							
7	Informal self-organised learning communities	0.564	0.574	22%	35%	37%	6%
EDUCATION: LEARNERS							

		Score		Impact (%)			
No.	**Drivers and trends**	**Uncertainty**	**Impact**	**Very strong**	**Strong**	**Some**	**Little**
8	Rising willingness of people to upskill in their profession and/or reskill for another profession	0.224	0.713	30%	53%	16%	0%
9	Rising willingness of individuals to take responsibility for own qualifications	0.410	0.637	23%	47%	29%	1%
EDUCATION: DEMANDS							
10	More personalised learning strategies in multi-cultural environments (language etc.)	0.420	0.652	27%	43%	30%	1%
11	Increasing importance of transversal skills (e.g. critical thinking, teamwork)	0.205	0.761	46%	39%	13%	3%
12	Increasing importance of recognising informally acquired skills	0.394	0.688	36%	38%	22%	4%
13	Increased importance of peer to peer learning	0.513	0.574	19%	38%	39%	4%
EDUCATION: INSTITUTIONS							
14	Greater institutional openness for assessing and recognizing informal skills	0.513	0.658	28%	45%	24%	3%
15	Acknowledgement of alternative education paths	0.474	0.684	34%	39%	25%	2%
16	New types of schools and alternative learning institutions	0.448	0.612	25%	38%	35%	3%
17	Ability of education institutions to re-connect with society to better align learning objectives and societal needs	0.595	0.631	27%	39%	29%	4%
18	Ability of educational institutions to consider learners' interests	0.545	0.650	30%	40%	27%	4%

		Score		Impact (%)			
No.	**Drivers and trends**	**Uncertainty**	**Impact**	**Very strong**	**Strong**	**Some**	**Little**
19	Increasing international standardisation of foreign degrees and qualifications	0.416	0.642	28%	43%	22%	7%
20	Better monitoring and assessment mechanisms to detect individual learning needs	0.497	0.643	25%	49%	22%	5%
EDUCATION: TEACHERS							
21	More capacity of teachers to address individual needs	0.578	0.665	29%	44%	23%	3%
22	Better multicultural learning and teaching strategies to better cope with diversity	0.516	0.627	24%	46%	25%	6%
23	Supporting the acquisition of complementary learning skills (transversal, meta) parallel to digital (= instrumental) learning	0.435	0.658	29%	41%	27%	3%
POLICY							
24	Rising attention to education in all policy domains	0.526	0.675	30%	43%	25%	1%
25	Increasing policy support for non-formal and informal learning	0.592	0.734	42%	38%	19%	1%

Validation emerged as an issue in three drivers under education out of 25 drivers included in the survey. One trend regarding validation "Increasing importance of recognising informally acquired skills" was rated as having a high impact by the 74% of the experts. Moreover, 73% of the experts rated the trend "Greater institutional openness for assessing and recognizing informal skills those trends and drivers" as having a strong impact. The items with the lowest uncertainty score and the highest impact score were chosen. Trends and drivers (factors) which are most likely have an impact in the future were used for scenario creation were:

- digitalisation will require high competencies not provided by institutions focusing on formal learning (no. 2);
- importance of recognising informally acquired skills (no. 12);

- acknowledgement of alternative education paths within education institutions (no. 15);
- new types of schools and alternative learning institutions (no. 16);
- supporting the acquisition of complementary learning skills (transversal, meta) parallel to digital learning (no. 23);
- better multicultural learning and teaching strategies to better cope with diversity (no. 22);
- policy support for non-formal and informal learning (no. 25).

To construct a limited set of coherent possible scenarios, a morphological analysis was used. A morphological grid was created using thefactors (trend and drivers) listed above. A consistency analysis was used to test the plausibility of possible combinations. The three scenarios were created through combining all seven factors listed above.

The three scenarios envision three different coherent and possible futures of learning and education with a focus on the role of non-formal and informal learning. A brief summary of the scenarios is sketched as follows:

Scenario 1: hybrid learning

In this scenario, new institutions will emerge and specialise to promote and recognise non-formal and informal learning especially based on digital learning. They will provide alternative paths through digital learning based on flexible and modular learning systems. These new institutions will emerge from both the public and private sectors. Moreover, public and private education institutions collaborate to foster non-formal and informal learning. Recognising non-formally and informally acquired skills and competencies will be easier due to measurable competency assessment and modular and competencies-based teaching which will be developed by new types of institutions. There will be increasing policy support for recognition of non-formally acquired skills and competency-based learning. On the other hand, formal education will slowly adapt to the changes in skills and their provision. Teachers at higher education institutions will be able to cope with the development and deliver both transversal skills and digital skills. Even more, teachers will be able to address the needs of increasingly diverse groups in the formal education system.

Scenario 2: market-driven education

The public education system is responding poorly to new trends. Only a limited group of teachers can translate new technologies into better teaching and transfer the new skills to the learners. These gaps will be filled by (new) private institutions but also Civil Society Organisations (CSOs) and Non-Governmental Organisations (NGOs) that provide modular and flexible, tailor-made learning programmes according to the needs of each individual. This society is characterised by an increasing economisation

of the education system. The stratification for adults and people already in a job is reflected by the educational opportunities: training on the job, or second or third career training is available only commercially, thus only affordable for very few employees and their employers. The education system is perpetuating increasing inequality as a social trend. Vulnerable groups, such as families with low income, single parents, families with many children, migrants from the global south, etc. are strongly disadvantaged in this setting. Due to modest policy support for acknowledgement of non-formal and informal learning, the recognition of alternative education paths will become difficult.

Scenario 3: digital transformation

In this scenario, almost all spheres of life are permeated by digital technologies. Large global players dominate the content provision, have total control of data, and exert influence over the curricula and on hiring people directly after graduation. Within the education system, STEM (Science, Technology, Engineering, Maths) subjects are promoted at all levels, leaving other subjects behind. For the education sector this means that institutions are fully digitalised, and children learn from early on to handle the technology and work with it. The same applies to adult education, for which mainly digital content is provided. There is heavy use of information technologies and platforms, also for informal and non-formal learning, provided by online content providers. Acknowledgement of certificates by firms and authorities is easy. However, there is also a persisting digital inclusion ("digiinclusion") gap. Although the level of digital competencies increases as adults have now been familiar with digital technologies starting from an early age, the pace of technological development is so fast that some can benefit extensively while others can only benefit at a minimum. Teachers and the education system are unable to develop and provide the necessary basic skills and complementary learning skills (transversal, meta) parallel to digital learning and cannot keep up with the digital transformation.

Assessment of scenarios

Based on these different scenarios it is also possible to identify some conclusions for policymaking. Although the scenarios are not forecasting the future, the assessment of the likelihood and desirability of the three possible development paths can reduce the risk in decision-making. In order to assess the scenarios, a workshop in Brussels were organized for the experts from lifelong learning, youth work and education. The participants of the workshop were asked to assess the three scenarios showing that the scenario "hybrid learning" was considered clearly as the most desirable scenario by the experts who participated in the workshop followed by the "digital transformation", with the "market-based" scenario identified as the least aspiring picture for the future. In regards to likelihood, the "market-based education" scenario was considered

as most likely, closely followed by the "hybrid learning" and "digital transformation" scenario.

4. Discussion

Policy conclusions can be derived from a specific scenario assuming that policy aims to promote a specific scenario or avoid risks associated with the scenarios in the areas of research, regulation, public investment, awareness, coordination and harmonisation (see Table 2). Recognition and validation of informal and nonformal learning emerged as significant issues in research and awareness raising especially for "hybrid learning" and "market-driven education" scenarios.

Tab. 2: Overview of scenario-specific issues for policy

	Scenario „hybrid learning"	**Scenario „market-driven education"**	**Scenario „digital transformation"**
Research	Integration of new types of institutions in an educational system, quality of and in recognition and validation, interplay of digital and real learning places and providers, intersectoral and cross-sectoral impact of educational policies related to non-formal and informal education	Role of non-formal and informal learning in social inclusion, benefits of non-formal learning at the individual and social level, recognition and validation of prior learnings, how to provide equity in access to non-formal learning, work-based learning and upskilling, reskilling and cross-skilling, open learning and permeability	Alternative open source solutions (WhatsApp, Facebook etc.) with the use of digital tools and artificial intelligence for the recognition of any kinds of competences, strong digital support at all stages of the validation process
Regulation	Establishment of new types of education institutions	Regulation for the accountability of providers	Ethical digitalisation, master dependence from GAFAM
Public investment	Stimulating inter and cross-sectoral collaborations, seed funding for new types of educational providers and brokers	Investments in NGO and CSO and non-vocational adult learning	Strong investment in alternative IT infrastructure (open source, non-GAFAM)

Awareness	recognition of non-formal and informal learning as key function within education	Policy and public awareness regarding the importance of non-vocational adult learning and role of non-formal	Citizens' awareness of data protection issues; transparency of algorithms; "Ethical guidelines"
Coordination and harmonisation	cooperation between educational sector and economy	Holistic and comprehensive long- term policies developed together with all stakeholders including CSOs, public institutions and business sector	Regional cohesion in IT infrastructure

Moreover, there are some fundamental trends and challenges associated with all scenarios. Among others, the ambiguous borders between formal, non-formal and informal learning will force the formal sector to develop clear strategies and practices to cope with the increasing demand to provide transversal skills. In addition, cross-sectoral collaboration, and peer-learning among teachers as well as with other stakeholders within and across education institutions need to be promoted. Validation and recognition of non-formal and informal learning emerged as an important issue in all three scenarios. Lack of acknowledgement of learning outcomes of non-formal and informal learning and methods for the acknowledgement of learning outcomes of non-formal and informal learning need to be developed and/or improved in the future.

5. Conclusion

Our study revealed three possible future scenarios that picture the future development and role of non-formal and informal learning in the education system. For each scenario, important conclusions for education policy regarding research, regulation, public investments, awareness raising, coordination, and harmonization emerged. Considering the future of non-formal an informal learning based on these scenarios, our results showed that recognition and validation of non-formal and informal learning is at the centre of plans for a permeable, open education system transformed by digitalization and marketization. It also emerged as a common issue and a challenge for the future of non-formal learning in three scenarios. Lack of acknowledgement of learning outcomes of non-formal and informal learning and lack of the recognition of non-formal and informal skills and competencies are among the most relevant barriers for the future of an open education system to other sectors and the society at large as well as a flexible education system between the different educational levels in Europe and beyond. Thus, more specific recommendations and methods for the

validation of non-formal and informal learning are necessary to be developed. It is also important that education providers, employers, trade unions, CSOs and other relevant stakeholders are involved in the validation process which can increase the acceptance among and cooperation between the formal education sector and the labour market. This multi actor approach requires a harmony and cooperation between different bodies in recognition and validation of prior learnings.

Our results underline not only the importance of validation but also call for new approaches and raise central issues. To mention some of them, validation is not only a way to recognize and present competences and in specific cases lead to formalized approaches to create those credentials based on already developed competences by individuals, but also a tool to demonstrate power within the educational system. The right to validate is based on a mandate given by national authorities today. These rights related to the validation process may appear in the future as an issue, especially in relation to open and flexible educational system within the European context and the powerplay between national and international can create a significant impact on how these rights can be realized. Moreover, there is an increased knowledge base regarding validation by different, mainly institutional players, across educational systems. This expertise and related experiences should be shared among different actors within national systems and between the systems. "What works" examples would help to overcome challenges, reduce failures and mistakes, and create a robust and sustainable validation concept towards all levels of education. Today, validation has a strong focus on tertiary education. However, the concept and notion of validation is not limited to a certain sector or education level and should be considered as an overarching approach as an integrative part of lifelong and life wide learning leading to horizontal and vertical permeability between different levels as well as different systems and providers.

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