Methodological choices in developing scenarios in vocational education and training – Reflections on three European scenario projects

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THEMATIC ARTICLE

ABSTRACT

The aim of this article is to explore methodological issues related to scenarios on vocational education and training (VET). In particular, we examine the extent to which VET scenarios depend or build on generalizable future expectations ("myths of the future") or archetypes of the future. The analysis builds on a review of recent methodological literature on scenario building applied to three international scenario studies on VET carried out by the European Centre for the Development of Vocational Training (Cedefop), in which the authors were partly involved.

We argue that neither scenarios on a particular issue ("issue-based") nor on the future of a particular society ("area-based") do justice to diverse VET systems but that scenarios in VET need to be "institution-based". Hence, both the relative independence of VET systems and their path dependency – especially in transnational projects – need to be taken into account. In conclusion, we propose that the regular application of the scenario approach could be a useful complement to various other prospective approaches used to guide European employment and vocational training policies.

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INTRODUCTION

Policy often faces questions concerning the distant future. In many cases, answers to such questions cannot be based only on the extrapolation of existing data, an approach which it is possible to adopt, for instance, when determining the aging of the population over the next decades. Many changes are unpredictable, the social acceptance of technological inventions being one such case in point. Furthermore, the preferences of the public can change rapidly in the event of external shocks caused by unforeseen events. Topical examples of this are the coronavirus pandemic or the Fukushima accident that led to a disruptive change in the public assessment of nuclear power.

Scientific attempts to support policy making with a view to the future can quickly bring science into competition with science fiction. A compromise between science and science fiction in order to support decision-making in this respect is the so-called scenario method.

Scenarios in the research and policy context are commonly understood as plausible, challenging and relevant stories of an imagined future. They are an established method in the inventory of methods of foresight and future studies and in strategic management (Fahey & Randall, 1998; Mietzner & Reger, 2004; Schoemaker, 1991, 2020; van der Heijden, 1996, 1997). Scenario building involves the application of sober, scientific analysis, but usually also includes imaginative and sometimes activating, participative methodologies, such as storytelling and the like. In fact, there is a broad discussion about theory, appropriate methodologies and approaches and the degree of theoretical maturity of scenario research (Spaniol & Rowland, 2018). In this article, we map and discuss three international scenario studies on Vocational Education and Training (VET) according to relevant dimensions of the discourse on scenarios (van Notten, Rotmans, van Asselt, & Rothman, 2003).

A current, lively methodological debate within this discourse is devoted to the similarities in content between scenarios for completely different subject areas. Are there typical patterns of expectations across the variety of scenarios? The relevant literature uses the term "archetypes" to refer to similarities in the construction of images about the future between different scenario projects (Boschetti, Price, & Walker, 2016). The main aim of this article is to examine and discuss appropriate methods of scenario building suitable for the development of VET systems. This includes the question of if the concept of archetypes of the future can be applied to the field of VET and whether existing VET scenarios constitute such 'archetypical scenarios' that could eventually be used as starting point for subsequent VET scenario projects.

We begin by presenting the three studies according to criteria that are commonly applied when characterizing scenario approaches. In a designated section, we discuss the relation between scenario topics and their context. Next, we offer an introduction to the literature on scenario archetypes and explain key concepts used in our analysis. Hereafter, we discuss the three studies against this theoretical background, and finally present our ideas for the further development of scenarios as an integrative part of foresight studies on VET in the conclusions.

MAPPING SCENARIO APPROACHES ON VOCATIONAL EDUCATION AND TRAINING

As a matter of fact, only three international scenario projects on VET have been carried out in the past 20 years. All of them were conducted by Cedefop, the European Centre for the

Development of Vocational Training (see also Cedefop, 2020, pp. 192–197)[1]. We refer to them by the publication date of the studies as "Scenarios 2003", "Scenarios 2010" and "Scenarios 2020" (Cedefop et al., 2003; Cedefop, 2010, 2020). We were partly involved in the study published in (2003) and to a much greater extent in 2020. The article thus serves as methodological reflection of our work.

In a contribution that maps 50 years of experience with scenarios, van Notten et al. (2003) classify scenarios according to three questions: a) what is the goal of the respective project, b) what is its content and c) how is the process designed? Of course, these three questions are highly interrelated. In Table 1 we summarize key differences between the three scenario approaches according to these criteria and discuss them below.

Goals

Whilst the 2003 scenarios were strongly targeted at becoming a testbed for policy strategies, the later approaches had more of an exploratory character. In 2003 the major focus of the project was on the formation of concrete *strategies* for the future, whilst in 2010 and 2020 the projects tended to serve the purpose of providing pictures of the future with a variety of functions, such as illustrating options for the future and supporting communication between decision makers. The time scale of the first two projects was 10 years, whereas the last project targeted a period of 15–20 years into the future and therefore eventually reflected insights into the persistence of VET systems that many projects and experiences from European co-operation have shown.

Processes

In conjunction with the different goals, processes and applied methods were also different. In the first project, a pre-defined formal framework was followed throughout the project. The general view was that scenarios focus mainly on the future *context* of VET, and that the purpose of the scenarios is to support the identification of appropriate strategies. The best strategies according to this framework are those that are "robust" with regard to different future contexts (van der Heijden, 1997). An expert trend survey was carried out, and the trends in training and education, economy, technology and the labor market were rated by 2,500 experts across the European Member and accession states according to their likelihood and their importance for the future of VET. Some participatory methods were also included, such as expert workshops at a national and European level. The 2020 project combined quantitative and qualitative methodologies to a much stronger extent and put more emphasis on the qualitative data. Emphasis was also placed on the participatory methodologies, including on their imaginative functions. In order to understand the changes in VET, the systems and significant factors for change were analyzed for the period of the preceding 25 years. This analysis included, for example, statistical analyses (e.g., the European Labor Force Survey), country case studies by national VET experts (e.g. on the development of higher level VET) and evaluations of national reporting systems (e.g., time series analyses of educational pathways) (Cedefop, 2017, 2018, 2019). In order to pre-structure the prospective view, a non-representative online survey of around 1,500 VET experts was conducted in Europe in spring 2018 and, in addition, a scenario workshop was carried out

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[1]Even for education or schooling in general there are not many scenario studies (OECD, 2006).

Table 1. Mapping the three Cedefop Scenario studies according to selected criteria from the scenario literature

	2003	2010	2020
Goals	Strategy formation, for VET in Europe and country level (p. 7)	Analytical tool for stakeholders, considering different aspects of the development of qualifications (p. 220)	Development of potential future paths, plausible and consistent pictures, supporting the European dialogue (pp. 189,197)
Timescale	Short-term (10 years)	Short-term (10 years)	Longer term (15–20 years)
Exploratory or decision support	Strong focus on decision support than exploration	Exploration and decision support	Exploration and decision support
Process design	Formal and intuitive elements Partly participatory on the national level	Mainly intuitive, mainly desk research	Mainly intuitive, desk research and participatory elements on the European level
Database	Sequence of quantitative and qualitative data analysis	Combination of quantitative and qualitative data and analysis	Combination of quantitative and qualitative data and analysis
Methods/instruments	European level trend survey Multiple national approaches including interviews and workshops	Integrated analysis of several studies of Cedefop on qualifications	28 country analysis of European trends and drivers in VET Case studies on selected countries; Europe level expert survey on trends in VET; European level scenario workshop
Content	4 contextual scenarios – country level scenarios	4 qualification system scenarios	3 basic and 6 detailed VET scenarios
Description, story	Snapshot	Snapshot	Chain, storytelling
Perspective/vantage point	Mainly prospective	Mainly prospective	Combining retrospective and prospective
Scenario dimensions	Socio-economic development/ systemic divergence or convergence STEEP Model	Dynamics of the qualification system/supply-led or demand-driven	Relative position of VET within the education system/characterisation of VET

Source: Authors.

involving some 25 VET experts, representing different fields of expertise and responsibilities. In the 2010 study, the scenarios were based on the analysis of the outcomes of several activities, such as workshops and case studies and desk research on the topic of qualification systems.

Content

All scenarios were non-normative, descriptive in their orientation. The 2003 scenarios were essentially sketches of the context of VET building on the STEEP model.[2] The focus of the 2010 scenarios was limited to a smaller scope, i.e. "qualification systems" as an important aspect of the development of VET and learning. The 2020 project resulted in three overarching story lines that were further broken down into six more detailed accounts of the future situation of VET. The way that the future was described also differed. The 2003 and 2010 studies described snapshots of the future, whereas the 2020 scenarios were presented as a story in which a chain of certain events have led to the future situation. In that sense, the perspective of the first two projects was prospective, whereas the 2020 project included retrospective and prospective elements.

After this brief characterization of the three projects, we would like to highlight one aspect that we consider of specific importance for our later reflections, the relation between scenarios and their context.

CONTEXTUAL OR TRANSACTIONAL VET SCENARIOS?

An important distinction for the comparison and discussion of the three VET scenario approaches is whether they are scenarios on a particular issue ("issue-based"), on the future of a particular society, country or region ("area-based"), or if they aim at complex institutions ("institution based" according to van Notten et al., 2003). Institution-based scenarios can be further distinguished into contextual and transactional scenarios, which Notten explains as follows:

> "The institution-based scenario can be broadly sub-divided into so-called macro, global, archetypal, framework, external, or contextual scenarios on the one hand; and focused, decision, internal, or transactional scenarios on the other [...]. The contextual scenario describes the institution's macro-environment: the variables and dynamics that are not directly influenced by the institution that conducts the scenario analysis. Contextual analyses can be used to explore unfamiliar or expansive terrain such as Shell's global scenarios, for example [...]. A transactional scenario describes the institution's meso-environment [...]. This type of scenario focuses on the interactions between variables and dynamics within a particular field. In some cases, transactional scenarios include normative elements as with the earlier-mentioned AMD scenarios [...]. Whether an issue addresses the contextual or transactional environment is determined by whether the institution can directly influence the issue under study. [...] However, the distinction between the contextual and transactional environments is sometimes as vague as it is controversial [...]." (van Notten et al., 2003, p. 430)

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[2] I.e. "Society, Technology, Economy, Environment and Politics". Sometimes also widened with "legal" change and then referred to as PESTLE.

Hence, "contextual" describes a situation in which the scenarios relate entirely to external conditions, the development of which cannot be influenced. "Transactional" describes scenarios in which the actors have more room to maneuver and where they shape the future that they are looking at. The "transactional type" is often chosen for institution-based scenarios. We address this point in further detail in the discussion.

ARE SCENARIOS STEREOTYPES OR MYTHS OF THE FUTURE?

The more recent scenario literature seems to agree that in some cases it might be useful to group imagined futures into a small number of future 'archetypes' (Boschetti et al., 2016, p. 76). The assumption is that a set of pre-defined archetypes can provide a perfect starting point and framework to integrate years of applied experience of future studies (Boschetti et al., 2016, p. 77), and thus save money and energy in scenario projects.

The idea is simple. Firstly, experts use extensive analysis and their own expertise to identify such archetypes from countless scenarios. The second step is for practitioners to define specific scenarios according to their needs and problems at hand through the use of such archetypes. This has sparked a wealth of studies and explorations of scenario archetypes recently, in which new scenario archetypes are served on a silver platter.

Scenario archetypes are defined as a group of futures which are deemed 'similar', i.e. they represent future variations of a common theme, according to the purpose of a specific analysis (Hunt et al., 2012).

Archetypes in recent scenario studies

The similarities in content between different scenario projects can be striking. Boschetti et al. (2016), for example, find great similarities as regards the two dimensions chosen for scenarios. The authors have analyzed examples that are representative for more than one thousand scenario projects. In these projects, one axis always mapped the *amount of regulation* within possible futures (ranging from global, interdependent, cooperative scenarios to those that are regional, autonomous, and uncooperative), while the other axis mapped *social values* and priorities ranging from self-interested, individualistic, and materialistic futures to communitarian ones (ibid p. 77). Furthermore, based on previous scenario overview studies, the authors extracted six "meta-archetypes" as can be seen in the Table 2.

Table 2. Meta archetypes

1. The market dominates (Keep the economy growing!)	2. Institutional reforms (a world that is influenced by a strong policy push for sustainability)
3. Deep transformation (the transformational society - new moral, institutional, and technological arrangements)	4. Local focus (Keep it local)
5. Decline (societal collapse)	6. Technology drivers (Succeed through science)

Source: Boschetti et al. (2016, p. 80).

This set of archetypes clearly expands previous generic types of scenarios as suggested for instance by Jim Dator who distinguished essentially between four types: (1) Growth/Continuation, (2) Limits/Discipline, (3) Decline/Collapse and (4) Transformation (various publications). On the other hand, a study based on the analysis of 140 science fiction confirmed only three of these previously proposed archetypes and claims to have uncovered three new archetypes (Fergnani & Song, 2020).

General expectations and attitudes to the future

Boschetti and colleagues go a step further in this respect. They examine to what extent scenario archetypes are based on fundamental future *myths* as general expectations or representations of the future on the individual, cognitive level.

As a result of an online survey with 950 participants representative of the Australian population, they find a high degree of correspondence, but not a total match, between their six archetypes and five identified myths or attitudes towards the future[3]. The five myths and their meanings are shown in the following Table 3.

The authors provide an insightful discussion of the relation between these sets of beliefs and scenario archetypes, and conclude that the five myths of the future are robust, fairly general and highly context independent. They could – for instance – be used in order to reveal the extent to which participants of a scenario workshop are representative of a larger population (in terms of their future expectations). We will come back to the potential use of such expectations in the concluding sections.

DISCUSSION: VET SYSTEMS IN SCENARIO BUILDING

In this section we analyze and reflect on conceptual and methodological choices that were made within the three projects against the background of their mapping in the scenario landscape. The relation between scenario content and environment and the notion of archetypes plays a

Table 3. Myths of the future

(1) social crisis	traditional values, social order, and human competence are likely to decline in the future
(2) eco-crisis	environmental conditions are likely to decline and lead to social unrest
(3) techno-optimism	science and technology are likely to create innovations that improve quality of life
(4) power and economic inequality	big businesses and governments are likely to misuse technologies and power and cause social inequality
(5) social transformation	society is likely to become more decentralized, caring, and collectively empowered

Source: Boschetti et al. (2016, p. 80).

[3]Derived from culture theory and partly pre-existing, reliable measurement instruments.

significant role and also has implications for methods and processes. As part of this reflection, we will also look at some particularities of VET itself, since the choice of methods and concepts cannot be done from scratch but must instead be adapted to the topic at hand. We conclude this section with an overview of the implications these decisions had for the three projects in a table that complements Table 1.

Context relation and drivers of change

The *demarcation* between the respective subject area of the scenarios and its environment (van Notten et al., 2003) is an important issue. Moreover, there are different ideas about the *relationship* between the environment and the respective subject area (van der Heijden, 1997). What is the relationship between scenarios and their environment, between developments of "STEEP" factors (i.e. Society, Technology, Economy, Environment and Politics) as potential drivers of change and VET itself? This relationship was handled differently across the different VET Scenarios.

The 2003 scenarios were designed to be "contextual" from the outset. In fact, the project co-ordination followed a scenario design as described in van der Heijden (1997), where there is a strict analytical separation of "scenarios" and "strategies". According to van Notten et al. (2003), these scenarios were contextual and the "transactionality" was supposed to be captured by the term "strategies". Strategies had to be tested in terms of their "robustness" by the actors in regard to different contextual scenarios as one step in the joint project. We will readdress the particular challenges created by this approach after discussing the relationship between archetypes and VET scenarios.

However, why not look at the question of if the surrounding economy fits learning and education? This becomes particularly relevant when work-based-learning or apprenticeships are major elements of VET. In this case, VET could be considered an integrated part of the economy and a therefore a driver of change itself.

This was the approach of the 2020 study that can be considered transactional. It clearly claimed some independence of VET: "Most scenario projects in VET (or education) emphasize the environment of VET rather than VET itself. In these cases, VET is implicitly modelled as a dependent variable subject to changes in environmental factors. [. . .] An important element in our approach, different from previous ones, is the relative independence of VET as a system or entity on its own." (Cedefop, 2020, p. 198). In fact, the analysis of the reasons for changes within VET systems was embedded into the different analytical approaches, i.e. country studies, country case studies, the questionnaire etc. by always including the question regarding reasons for changes documented. This has led to scenarios described from a retrospective perspective that include STEEP factors with a direct impact on relevant aspects of VET for the particular story. The following quote provides an example of this:

> "Accelerated technological change has created new patterns of complementarity between the work of machines and humans and led to an even more volatile labor market. Predicting skill demands has become harder despite the advances of big data analysis. Growing uncertainty about future job prospects has led to the introduction of an unconditional basic income [. . .] Resources have been shifted to individuals in order to provide greatest choice and generous individual learning accounts have become the means to do so [. . .]" (the Learning à la carte scenario Cedefop, 2020, p. 207).

The 2010 study targets the development of qualification systems and not VET as a whole. However, VET is, of course, continually included as an essential factor in the analysis. The major

axes of the "futures plane" were constructed by looking at the dichotomies of very flexible as opposed to long-term, stable qualification systems on the one hand and demand vs. supply-led orientation on the other.

> "Although this report has traced some changes in the drivers that are impacting on qualification systems, it is also clear that there is, in this respect, a considerable measure of continuity rather than a sudden change. The drivers have combined to accentuate the importance of making sure that qualifications meet the needs of the main users in a more knowledge-oriented society and economy, and that there is a clearer link between different kinds of qualification and more openness, enabling more open approaches to lifelong learning to develop." (Cedefop, 2010, p. 193)

In this way, the study also acknowledges the importance of system-internal factors (in this case cross-institutional ones) vis-a-vis contextual factors.

Archetypes

Do the scenarios developed in the three studies resemble archetypes of the future? What are the archetypes which are relevant to the future of VET? Clearly, scenarios studies which have been analyzed to identify archetypes cover a broad range of topics – such as environmental policies or societal and political change. They also have a much broader perspective and go beyond a designated societal subsystem, such as vocational education and training. Is this possibly a sign that the VET scenarios compared here were developed in too small a way and with too little sense of the big trends and drivers?

Based on factor analyses of the overall European survey dataset, the 2003 study distinguishes on the one hand a continuum between competition and cohesion, and on the other hand converging or diverging 'learning systems'. This obviously fits the pattern identified by Boschetti et al., because one dimension describes the extent of regulation, the other the individualistic/ collectivised spectrum. Furthermore, the four scenarios correspond quite well to the scenario archetypes as can be seen in the Table 4.

In contrast, the two dimensions that were used in the "2020 Scenarios", which are the relative position of VET within the educational system and the characterisation of the content of VET, do not fit at all with the two dichotomies that Boschetti et al. (2016) have identified. Clearly, the

Table 4. The Cedefop Scenarios from 2003 and scenario archetypes according to Boschetti et al. (2016)

Cedefop scenarios from 2003	Corresponding archetypes
"Divided Europe", characterized by competitiveness and splendid isolation	corresponds to the archetype "markets dominate"
"Towards a comprehensive European education and training system" characterised by balance and coherence	corresponds to "institutional reforms"
"Pick and mix Europe", which stands for unity in diversity	comes close to the "local focus" archetype
"Learning Europe" that sees converging regulations and provision being developed despite prevailing divergences in the economy and society	shares elements of the "transformation" archetype.

Source: Authors.

vocational and academic divide relates to social values, but certainly not to the ones of individualism and communitarism as suggested by the authors. With much imagination, one could relate the other dimension of Cedefop's scenario model (distinctive vs. pluralized) with the amount of regulation and suggest that pluralization stands for an egalitarian principle and distinctive vocational education and training presupposes some hierarchical notion. However, this would also be a daring interpretation. It is equally difficult to assign the three VET scenarios to the archetypes suggested. They do not correspond to the ones by Dator nor to the ones by Boschetti et al. nor to those of Fergnani and Song. The VET scenarios of the 2020 study seem to lie across such archetypes.

The juxtaposition of scenarios and archetypes suggests that scenarios describing the future in general may be very similar indeed and are possibly determined by certain myths about the future. This might especially be the case when scenarios are more *contextual*. The more they become *transactional,* the more they may differ significantly from these.

Contextual and transactional scenarios, archetypes and the VET scenario process

Actually, this issue was debated within the 2000s scenario project team, and some of the participating country teams developed their own ways of dealing with the "Generality" of the European context scenarios and the formalized approach to scenario construction. We will exemplify this based on the case of VET scenarios for Germany as part of the 2003 project.

One of the major methods applied as the basis of scenario construction was the large-scale expert survey among a specified number of experts per European country. The standardized questionnaire collected general trends across three domains: education and training, societal trends and economic and technological change. The outcomes of this were to be discussed at national workshops. However, only shortly before the scenario survey, a very comprehensive "Education & Science Delphi" (Kuwan & Waschbüsch, 1998) had been carried out in Germany just prior to the turn of the millennium, and this needed to be supplemented in a meaningful way. Moreover, in various discussions, the German experts made it clear that they see themselves as shapers of the vocational training system and thus make their own contributions to technological or social change rather than merely reacting to developments (Grollmann, Kruse, & Rauner, 2005; Grollmann, Kruse, Rauner, Klein, & Kühnlein, 2003). In order to convince the German VET experts, the German team carried out a number of interviews with practitioners and stakeholders to adapt the scenarios and to make sure that they took account of the recent discussion in Germany and were more relevant for German stakeholders. This meant that these German scenarios were more "transactional" than the strongly "contextual" European scenarios and especially reflected the shared German conception, that VET can be a driver of change itself.[4]

It seems as if the rather strong formal structuring of the process in the 2000s scenario project and the contextual focus had partly undermined the possibility of developing ownership and relevance on the European level. Modeling VET as unilaterally dependent on external factors has clearly led to insufficient consideration of changes within VET and the relationship of VET to

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[4]A further important finding for some of the countries of the early Cedefop scenario project was that actually the process of discussing different futures and jointly weighing alternatives is a value in itself and at least as important as the scenarios themselves. This is also one of the reasons why a small follow-up project funded by Cedefop has focused on this process (Leney, Coles, Grollmann, & Vilu, 2004).

general education. These last two aspects, on the other hand, represent central reference points in the scenarios from 2020.

We believe that for these scenarios the combination of prospective and retrospective analysis has exactly helped to "understand the underlying systemic structures and relationships between the parts, and then below this to the baseline, to discern the worldviews in terms of the assumptions, beliefs and values which create and sustain the systems" just as Bradfield, Derbyshire, and Wright (2016, p. 64) have proposed in their demand for the use of retrospective methods. The use of historical and retrospective analysis in the scenario process is emphasized by several articles in the very recent scenario discussion (Bradfield, Derbyshire, & Wright, 2016; Schoemaker, 2020). In this sense, the 2020 scenarios have followed a path of inductive reasoning as opposed to deductive or normative approaches (Cardoso & Emes, 2014, p. 29), and this has helped to understand the internal logic of developments in VET systems. The common denominators of the drivers of the development of VET systems in European countries have been identified. The more exploratory character of these most recent scenarios, their "groundedness" through the retrospective analysis and the nature of description may have been reasons for the good level of acceptance among participants and users of the scenario process. At least, the scenarios seem to have passed their field test for the European dialogue on VET. Moreover, the recent Cedefop Scenarios played a role at different national levels: For instance, stakeholders in Finland reported that this research helped to put the national reforms of 2018 (a new legislation combining youth and adult education) into a European context. In Norway, the scenarios underpinned policy reform in higher VET, and results of the research are expected to be reflected in a white paper, which is currently being prepared. In addition, in Ireland and Belgium the project informed ongoing policy debate on the future of EQF level 5 awards in higher education institutions and the pathways of VET in higher education. Equally, in the Netherlands the progression from VET to higher education is receiving more attention, and the results of the study were being raised at various national conferences. In Greece, several respondents indicated that a new draft law on VET adopts many ideas proposed by the project. In Poland, according to a survey respondent, the project underpinned the National Skills Strategy. In Estonia, the scenarios informed discussion of expert groups working on the Education Strategy 2035 as part of Estonia's strategic planning for 2021–2035. In Slovenia, a process on the future vision of VET has started recently and the scenarios have been used as part of this.

According to our experiences, leaving the relationship between the VET scenarios and their technological, economic and societal surrounding open makes them compatible with competing views. The assumptions underlying various studies and analyses of the future of the economy and technology are very different (Greve, 2017). The majority of studies assumes that technological development dominates the demand for labor (Frey & Osborne, 2017). In some cases, however, training and learning are seen as a part of work, the economy and its development (Hirsch-Kreinsen, 2016; World Economic Forum, 2018), while in others training and experience are even considered as an essential resource in dealing with technological change (Pfeiffer, 2018).

This reinforces our view that we should consider VET as a relatively independent and complex *institution* in the first place, instead of a particular issue ("issue-based") or a particular society, country or region ("area-based"). This further emphasizes the bi-directional relationships of cause and effect that tend to support the choice for the *transactional* variant of scenario building. Qualification systems might be an exception, since they are by their very nature overcoming the boundaries of institutions and could therefore be characterized as issue-based.

Table 5. Summary of the analysis

	2003	2010	2020
Type of scenario approach	Institution-based/ Contextual	Issue-based	Institution-based/ transactional
Scenario process	Formal, strongly structured	Mix of intuitive and formal approaches	Mix of intuitive and formal approaches
Result	Complex set of scenarios, 4 European meta scenarios and strategies	European qualification system scenarios	3 overarching European VET Scenarios and 6 detailed scenarios
Relation to archetypes	high	low	low
Perspective/ vantage point	Mainly prospective	Mainly prospective	Combining retrospective and prospective
Description, story	multiple comprehensive snapshots on different levels	Snapshot	Developmental chain that can be related to external developments different ways
Use of the scenario	Testbed for strategies	-	Stand-alone stories that can be used as reference in strategic communication

Source: Authors.

However, we do not have sufficient experience at hand to make a proper judgment about the process of using the 2010 scenarios in the strategic dialogue (Table 5).

CONCLUSIONS

A regular discussion in research, policy and practice taking into account the state of the art of the discussion on scenarios of VET and general future scenarios would be worthwhile. This should also cover the continuous verification, review and reflection of past scenarios and foregone future studies on VET, including skills forecasts. Establishing a regular scenario building process into the European VET dialogue would fit very well with the following postulation of Expert Group on Foresight Modelling (2015, p. 6):

"What is required is not a single 'definitive' foresight model, but rather a platform that supports Concurrent Design Foresight (enabling real-time interaction with stakeholders) through both non-numerical and numerical modelling. Such models are not currently available for policymaking in the European Commission. The recommendation of this expert group is that the European Commission should develop a platform for analytical modelling to support Concurrent Design Foresight. A pilot Concurrent Design Foresight modelling platform and process is proposed, which will focus on developing visions for the EU of a low-carbon transport future, identifying the possibilities for future developments and indicating areas for policy support."

From our experiences we can draw the following lessons for the further establishment of such a process: The discussion about recurring basic patterns of argumentation in future scenarios as well as the significance of generally existing ideas about the future present themselves as an

interesting basis for the reflection of scenarios. However, they are too general for the VET scenarios discussed here. Hence, the notion of scenario archetypes does not directly apply to the domain of VET. Furthermore, in our opinion the findings of the research about commonalities between scenario studies and myths of the future show that there is a certain risk of losing the imaginative power of scenario making, that in consequence might also decrease their "groundedness" and acceptance. The well-trodden paths of existing ideas or even stereotypes about the future may limit "thinking-out-of-the-box". However, archetypes and myths of the future, if carefully considered, could facilitate the sampling when making up scenario teams or when surveying attitudes, expectations or opinions as a preparatory step to scenario construction. Moreover, archetypes can offer an effective way to analyze specific scenarios on certain subjects with regard to more overarching and general scenarios in order to better understand their implications.

Scenarios about VET can be classified as "institution-based" scenarios. With the claim to construct international/European scenarios, the diversity of the different systems must also be taken into account. These two facts, the institutional focus and the diversity of conceptions on VET are the reasons why the idea of archetypes or purely contextual scenarios seems to be limited for the field of VET. On the other hand, archetypes could be an excellent basis for placing the different VET scenarios in their broader societal context. Discussing which VET scenario corresponds to which archetype of the future could be a useful extension of the scenario process. Discussion of the correspondence of different VET scenarios and archetypes of the future might be an interesting part of a dialogue with policy and practice at a European and national level. The analysis also confirmed our decision to take the special circumstances of vocational education and training into account methodologically and not simply to adopt an existing method according to the textbook.

In light of existing research, we would argue for the role that the relative independent VET systems and practices can play in market and technological developments. In future studies of VET, results of skills and labor forecasts (that are usually looking at the "demand side") need to be balanced with research on changing skills governance, feedback mechanisms and changing VET policies that do justice to the structuring effect of the training system, something which has at least a long-term impact on the demand on the labor market.

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