New qualifications and competencies for future-oriented and attractive TVET systems
(Working title)

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Concept Note
1. Basic assumptions and underlying line of reasoning

TVET – as any sector of an education system – is designed to make people capable and resilient to tackle current and future challenges in their working and private life and to keep it relevant for the economy and society. Hence, the governance, infrastructure, content, and teaching and learning processes of a TVET system must be organized to accomplish this key function in an effective and efficient way.

While these requirements have not been new for TVET, frame conditions have changed considerably over the last decades. Continuous modernization of TVET practices has been a key component of most TVET systems, although in many countries there are complaints from the business sector that the respective system is not adequately demand oriented. Accelerated innovation in digital technologies, new demands in the area of environmental protection, and increased processes of migration are just a few examples which indicate that TVET systems must respond more rapidly than in the past to modernize its infrastructure, capacities, processes, and practices. Beyond, the current Covid-19 pandemic provides a lively example on the requirement that education systems need to prepare themselves for dealing with unprecedented and unpredictable disruptions.

Keevy translated this entry-point into the BILT “theory of change”: 
Based on these assumptions and entry points, the challenges for any TVET system and their stakeholders in charge of continuously modernizing it can be phrased in two key questions:

1. How can new qualifications and competencies (NQC) be identified timely, integrated into curricula and training regulations, and implemented effectively in adequate learning environments?

2. Which stakeholders on different levels of a TVET system (macro, meso, micro) can contribute to the identification, integration and implementation of prospective qualifications and competencies?

The following chart indicates a broad conceptual framework for further investigating the two key questions:

<table>
<thead>
<tr>
<th>New qualifications and competencies (NQC)</th>
<th>Stakeholders on macro-level</th>
<th>Stakeholders on meso-level</th>
<th>Stakeholders on micro-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification</td>
<td>Contributions of respective stakeholders to continuously maintain the TVET-system responsive and agile, keep it relevant for the economy and to make people capable and resilient to tackle current and future challenges in their (working and private) life.</td>
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<tr>
<td>Integration</td>
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<tr>
<td>Implementation</td>
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</table>

Figure 1: BILT “theory of change” (Keery 2020)

Figure 2: Conceptual Framework (basic version)
2. First elaborations and definitions

The basic conceptual framework outlined above implicitly introduces some terms which require further clarification. The following elaborations build on the results of prior stages of the BILT project as well as on ideas put forward by the lead experts.

Following the conceptual framework, three components will be addressed:

1. NQCs: ‘New’ qualifications and competencies
2. 3I’s: Identification, integration, implementation of NQCs
3. 3M’s: Macro, meso, micro level of stakeholder involvement

Ad 1.: ‘New’ qualifications and competencies

BILT documents use the term “new qualifications and competencies (NQC)”. Terminology with regard to this key term of the project needs further consideration for the following reasons:

- Basically, many issues in TVET focused on in current discourses (e.g. digitization, green economy, migration, globalization) are not new, but have gained deeper attention, are regarded more relevant due to overarching developments in economy and society and thus are higher prioritized in public and expert debates.
- “New” (as well as “innovative”) is a relative term. What is “new” for one country may be well-familiar for others.
- Very often, issues are not new altogether, but specific elements of it bring in new facets or perspectives. For example, digitization of work-processes or “new (!) technologies” have been an issue in TVET for decades. Although the topic has a long-standing record, present technological innovations give reason to challenge existing practices in TVET. Very often, required changes in curricula or teaching and learning practices are not fundamental or revolutionary, but result in incremental changes blending old and new components.
- It is less qualification and competencies which are new but their composition for addressing relevant economic, technological, or societal trends. For example, new demands resulting from the introduction of digital technologies in work-processes will be met by designing packages of qualifications and competencies which are already well-known (see Trend Mapping Study, p. 16, 25). On an abstract level, one may call these qualifications/competencies “new” (e.g. “digital competencies”). In fact, they are not new but just newly combined.
As “NQC” is already well established in the project, semantics of “new” should be briefly explained at suitable chapters of the publication. In that context, the meaning of “NQC” could be explained as “novel”, “newly relevant”, or the like.

Beyond elaboration of the term should address the fact, that there is a normative gap between the identification of future challenges and the definition of respective qualifications and competencies. There is no determinism between assumed economic, technological, etc. developments and requirements of qualifications and competencies. Future is not determined; it is going to be shaped by people who need to be prepared for this ambition.

For example, one may identify the ubiquitous pervasiveness of digital technologies in economy and society as a relevant trend TVET needs to respond to. But it is left open, if people should primarily learn to operate pre-defined technological systems and business processes, or if they should also learn to reflect on the desirability of specific processes. As pointed out in the Trend Mapping Study (p. 20), it has to be decided normatively whether only labour market needs decide on what counts in curricula, or also the expectations and demands that emerge from society are relevant in designing curricula.

One further issue under discussion refers to the semantics of the two terms “qualification” and “competencies”. While “qualification” is broadly understood quite similar¹, “competencies” is understood in different ways reflecting the different paradigmatic approaches of TVET systems. Without entering an academic debate, it seems worthwhile to make sure about the different notions of “competency” / “competence”. Given the diversity of meanings, two key questions need to be addressed:

- There is a distinction of understanding the term as an observable behavior or as an inner potential / disposition of people.²

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¹ For example, see the Keevy’s notion in figure 1: “qualification as an artefact that summarises learning outcomes in a way that is understood by the learner and the public, and can be used for certification purposes”. Similar definitions are provided by CEDEFOP (“an official record (certificate, diploma) of achievement which recognizes successful completion of education or training, or satisfactory performance in a test or examination; and/or requirements for an individual to enter, or progress within an occupation”) or UNESCO: “Official confirmation, usually in form of a document certifying the successful completion of an educational programme or of a stage of a programme. Qualifications can be obtained through: i) successful completion of a full programme; ii) successful completion of a stage of a programme (intermediate qualifications); or iii) validation of acquired knowledge, skills and competencies, independent of participation in such programmes. This may also be referred to as a ‘credential’.

² In literature, “competency” is often used for the former while “competence” relates to the later. However, application varies across educational sectors and academic disciplines. If physicians talk
“Competencies” or “competences” are umbrella terms which need to be specified by a number of sub-terms. Quite common in educational psychology are knowledge, skills and attitudes (knowing – doing – being/wanting) as such sub-terms. However, other definitions introduce other terms, e.g. abilities.

For the publication, there should be no single prescriptive definition because the audience is very heterogeneous. However, terminology should be used in a transparent and consistent way in all three volumes. Given the future perspective inherent to NQC, there is a preference for a broader notion of competency to be understood as a non-observable disposition rather than a behavioral performance. This doesn’t rule out the fact that at a certain point in the design of curricula or training regulations, competencies as an inner disposition need to be put into observable forms (e.g. as learning outcomes) and as such assessed for sake of certification. Once first drafts of the publication volumes are available, the possibility of an additional paper including a glossary should be explored.

In any case, qualifications and competencies are closely interrelated. One possible way to structure the relationship could be as follows:

![Diagram](image)

*Figure 3: Possible relationship between key terms*

about organs of a human body, all have the same notion of the terms used. Unfortunately, this is not the case in education.
Identification, integration, and implementation (3I’s) of NQCs are convincing stages towards modernization of TVET practices. These stages are important conditions to maintain a TVET system innovative, responsive, and agile in times of continuous chance and uncertainty. In the publication, the focus of each stage should be defined clearly:

- **Identification** of NQC: The focus should not be on what qualifications and competencies are (currently) relevant with regard to the four themes Digitalisation, Greening, Entrepreneurship and Migration, but on how new trends and relevant themes are going to be identified. This would add to the already existing findings of the Trend Mapping Study (which already addressed the “what”-question at length) but still could take the four themes exemplary for illustrating potential instruments (“how”-question) of NQC-identification.

Some potential approaches / instruments for continuous identification of NQCs:
  - Research institutions dedicated to conduct respective research;
  - public funding to commission research projects or keep up a productive research infrastructure;
  - transfer units to compile relevant research findings available from international and national institutions (labour market intelligence units, observatories, etc.);
  - platforms / conferences / networks for sharing knowledge, identifying research gaps, commissioning research projects;
  - company-based detection strategies.

- **Integration** of NQC: Once relevant competencies are identified, they must be integrated as new qualifications in curricula and training regulations. The BILT project has identified four different integration-strategies in its Trends Mapping Study, that can be complemented with other strategies.

Some potential approaches / issues for integration of NQCs:
  - four approaches of integration into curricula and training regulations (cross-cutting, sectoral, occupational, additional);
  - bottom-up vs. top-down curriculum development;
  - engagement of key actors from the business sector in curriculum development;
  - adequate abstraction level of curricula;
  - degree of flexibility and adaptability of curricula for implementation bodies; dealing with tension between modularization / flexibility of curricula vs. coherence / standardization.
• **Implementation** of NQC: NQC integrated in curricula and training regulations must be implemented in teaching and training. This happens in a local context, possibly requiring new teaching approaches. Additionally, teachers and trainers must be enabled to convey NQC through adequate teacher and trainer training.

Some potential approaches / issues:
- Constructive alignment of objectives/learning outcomes, assessment, methods/teaching and learning material;
- training of TVET personnel;
- communities-of-practice.

Ad 3.: Macro, meso, micro level of stakeholder involvement

Innovativeness, responsiveness, and agility of a policy area like TVET vitally depends on the commitment and capabilities of relevant stakeholders. Identification, integration, and implementation of NQC requires a joint effort of stakeholders within their roles and functions on different levels. While the distinction of macro-, meso- and micro-level alone is not very meaningful, assigned roles and functions in the TVET system provide necessary criteria to introduce reasonable differences. Based on these considerations, the following typology is suggested:

- **Macro-level / Governance:** Bodies with formally / legally assigned tasks, areas of responsibility, purview to lead, manage and administer the TVET system. This would primarily cover ministries and statutory bodies with legally assigned duties in the governance of TVET (e.g. BIBB).
- **Meso-level / Advocacy:** (non-governmental) institutions, associations, platforms, etc. which advocate for / participate in the advancement of the TVET system without assigned legislative authorities. In particular, this would comprise business membership organizations (BMO), trade unions, research institutes, NGOs, teachers’ associations, etc.
- **Micro-level / Delivery:** Institutions providing TVET programs and courses in different learning environments at different learning venues. In particular, this would comprise TVET schools / colleges, companies, other TVET providers.
It may well happen that specific stakeholders are on the meso-level in one country but on the macro-level in another one. For example, in Germany chambers of commerce exercise legally assigned duties (e.g. conduct of final examinations) and with this task could be placed on the macro-level while in neighboring Switzerland chambers are without any legal function in the TVET system.

Apart from the assignment of respective stakeholders to an adequate level, all stakeholders can basically become engaged and take responsibility in identification, integration and implementation of NQC.

**Figure 4: Conceptual Framework (extended version)**

<table>
<thead>
<tr>
<th>New qualifications and competencies (NQC)</th>
<th>Macro-level Governance (e.g. ministries, statutory bodies, etc.)</th>
<th>Meso-level Advocacy (e.g. BMO, trade unions, research institutes, teachers/associations, NGOs, etc.)</th>
<th>Micro-level Delivery (e.g. TVET schools, companies, other TVET providers)</th>
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<tr>
<td>(e.g. four approaches in curriculum development: bottom-up vs. top-down development; abstraction level of curricula; degree of flexibility: modularization)</td>
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<td><strong>Implementation</strong></td>
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