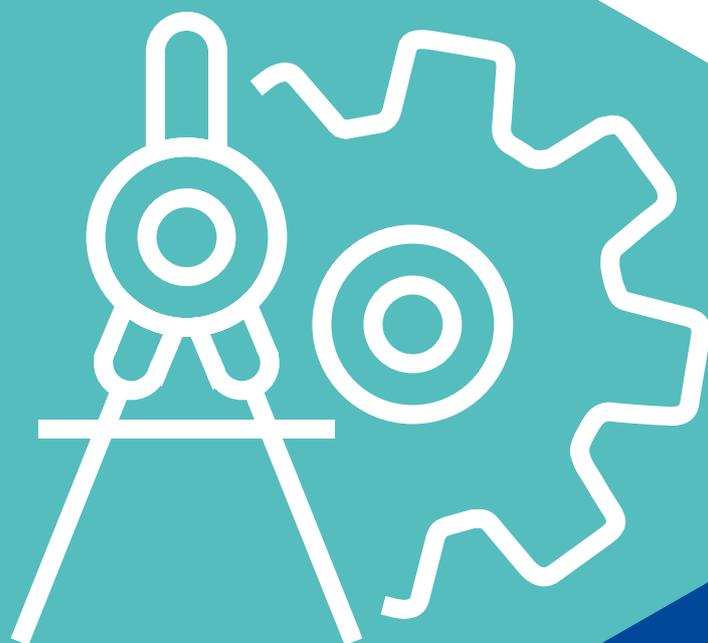




# ILO Toolkit for Quality Apprenticeships

## Volume 2: Guide for Practitioners

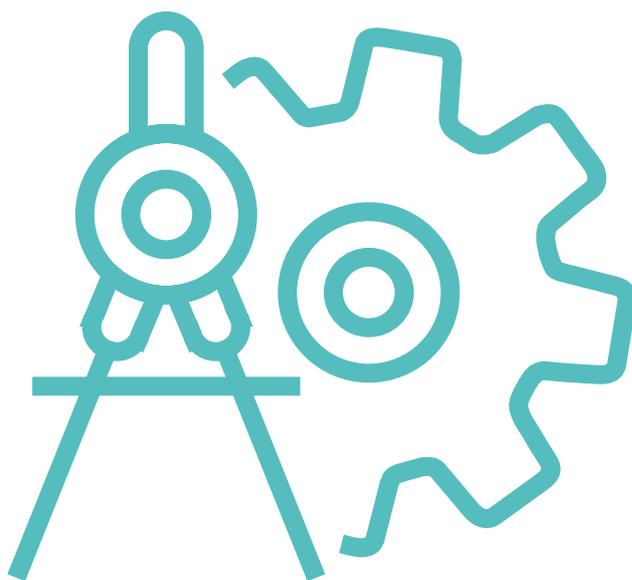
### ▶ **Developing quality apprenticeship programmes**



# ILO Toolkit for Quality Apprenticeships

## Volume 2: Guide for Practitioners

### ► Developing quality apprenticeship programmes



Edited by: Ashwani Aggarwal

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## ILO Toolkit for Quality Apprenticeships

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## Acronyms and abbreviations

<b>BIBB</b>	German Federal Institute for Vocational Education and Training
<b>CBC</b>	competency-based curriculum
<b>Cedefop</b>	European Centre for the Development of Vocational Training
<b>CVET</b>	continuing vocational education and training
<b>DC dVET</b>	Donor Committee for Dual Vocational Education and Training
<b>EaFA</b>	European Alliance for Apprenticeships
<b>ESS</b>	employer/establishment skills survey
<b>ETF</b>	European Training Foundation
<b>EU</b>	European Union
<b>GAN</b>	Global Apprenticeship Network
<b>GIZ</b>	German Corporation for International Cooperation ( <i>Deutsche Gesellschaft für Internationale Zusammenarbeit</i> )
<b>GTOs</b>	Group Training Organisations
<b>ICT</b>	information and communication technology
<b>ILO</b>	International Labour Organization
<b>in-CT</b>	in-company trainer
<b>IOE</b>	International Organisation of Employers
<b>IVET</b>	initial vocational education and training
<b>KPI</b>	key performance indicator
<b>LMI</b>	labour market information
<b>MoU</b>	memorandum of understanding
<b>NCS</b>	National Competency Standards
<b>NIMI</b>	National Instructional Media Institute
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>off-JT</b>	off-the-job training
<b>OJT</b>	on-the-job training
<b>OS</b>	occupational standard
<b>RTOS</b>	Registered Training Organizations
<b>SDC</b>	Swiss Agency for Development and Cooperation
<b>SFIVET</b>	Swiss Federal Institute for Vocational Education and Training
<b>SMEs</b>	small and medium-sized enterprises
<b>TVET</b>	technical and vocational education and training
<b>VET</b>	vocational education and training



## ▶ Developing quality apprenticeship programmes

*When you look at apprenticeship systems around the world, the most important success denominator is practically always social dialogue. Apprenticeships work because they link classroom and workplace training and because they tap the knowledge of both employers and workers on what training is needed and how to deliver it.*

ILO Director General, Guy Ryder, speaking at the launch of the B20 and L20 “Joint understanding on key elements of quality apprenticeships”, 18 June 2013, in Geneva

Developing an apprenticeship programme is the first stage of the apprenticeship life cycle, which can be divided into four main processes, as shown below. Accordingly, this module includes four sections explaining each of these processes.

### Developing quality apprenticeship programmes

▶ Establishing an institutional framework for social dialogue

▶ Identifying skills needs in sectors and occupations

▶ Developing occupational profiles and curricula based on skills needs assessments

▶ Providing instructional and learning materials

## ▶ 2.1 Establishing an institutional framework for social dialogue



### ***The issue: Why an effective institutional framework for social dialogue is necessary***

**Meaningful social dialogue** is considered to be one of the six building blocks of quality apprenticeship systems. It is crucial for the successful development and implementation of policies as well as programmes. While social dialogue is covered in Toolkit 1, issues specifically relating to social dialogue for practitioners are discussed in this section.

At the national level, social dialogue is typically about developing policies, law and regulations, and qualification and quality assurance systems. At the sectoral level, social

dialogue concerns developing sector skills plans, based on the assessment of skills needs and gaps. At the local level, social dialogue (between enterprises, TVET providers and other institutions) generally involves implementing and monitoring apprenticeship programmes.

An effective institutional framework that allows social partners to engage with each other and with the wider network of stakeholders at national, sectoral and local levels is a cornerstone of successful social dialogue. It enables social partners to become an integral part of the system and to play an active role in the development of quality apprenticeships. Institutional frameworks take various forms in different countries – tripartite, and also bipartite, bodies exist at the national, sectoral and local levels. Some examples are given in box 2.1; for further details, see chapter 5 of Toolkit 1.

### Box 2.1 Examples of institutional frameworks



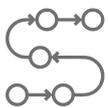
*National level:* BIBB (Germany), Central Apprenticeship Council (India).

*Sectoral level:* Sector Education and Training Authority (SETA, South Africa), S-System Councils – National Services for Industrial Training (SENAI, Brazil), sectoral consultative committees in INFOTEP (Dominican Republic).

*Local level:* Vocational Training Committees of Chambers (Germany).

*Enterprise level:* Rolls Royce has a Governance Board that sets the policies and the direction of the apprenticeship programme. It consists of the plant manager, the production leaders, the apprentice programme manager and the human resources manager and it sits three or four times a year. The Governance Board determines future needs for apprentices and interns, reviews the progress of each apprentice, resolves any major issues that may arise throughout the programme and considers any proposals for change.

Source: ILO, 2017; Information provided by Linda M. Hogan, learning adviser to Rolls Royce.



### ***The steps needed to establish governance or an institutional framework for social dialogue***

To establish governance or an institutional framework for social dialogue, the entity or entities responsible for developing and implementing apprenticeship programmes (e.g. public authority, employers' and workers' organizations) should take the following steps in consultation with other stakeholders:

- ▶ Identify the existing institutional framework for apprenticeship programme development, assess its effectiveness and, if necessary, strengthen it. The assessment of the institutional framework may take place during the process of assessing the apprenticeship policy environment.

- ▶ In the event that no such mechanism exists, establish a multi-stakeholder platform (e.g. a working group or steering committee), preferably at the sectoral level, to guide programme development. Key stakeholders of the platform typically include:
  - » employers' organizations, including sectoral trade associations, chambers and other professional associations
  - » workers' organizations
  - » government representatives from ministries of labour, education and other relevant sector ministries, relevant public authorities and TVET agencies and providers
  - » youth organizations
  - » civil society organizations.
- ▶ Define the roles, responsibilities and funding of the working group(s).
- ▶ Determine the entity that will host the working group(s) and secretariat. Depending on a country's context, this could be an employer-led body or a government TVET agency. However, tripartite constituents may have equal authority in the decision-making processes of the group. For example, on the board of BIBB in Germany (Tool 2.1.2), each of the four main stakeholders – federal government, state governments, employers' and workers' organizations – have an equal voting share (25 per cent).
- ▶ The multi-stakeholder working group can also support other processes, such as guiding assessment techniques and evaluating existing programmes.
- ▶ At the local level, if needed, establish a working group to coordinate and support the implementation of apprenticeship programmes. This may be desirable when the programme is implemented in many geographical regions.





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## Tips

- ★ No one-size-fits-all solution – The roles of various stakeholders are not the same in every country. Many factors, including the political environment, social and economic policies, traditions and the capacity of stakeholders, influence the allocation of specific roles and responsibilities between different stakeholders. Nevertheless, it is recommended that policy-makers follow the principle of “employers in the driving seat” when determining the roles of stakeholders. For details, refer to Annex I.
- ★ When a country is starting an apprenticeship programme for the first time, stakeholders can work together through a steering committee or working group. As the programme expands, a more structured institutional framework is needed. For example, a steering committee and a technical working group were set up in Zanzibar, Tanzania to oversee the development and management of apprenticeship programmes (Tool 2.1.3).
- ★ Working groups which have decision-making powers are more effective than those which have purely advisory roles. Social dialogue is sustainable if all stakeholders are aware of the benefits to be gained by their participation.
- ★ To foster effective cooperation through social dialogue, trust-building measures and face-to-face contacts are helpful in overcoming barriers and building a strong connection between the various stakeholders.
- ★ To establish trust among partners, it is essential that the communication processes are transparent.



## Tools for establishing an institutional framework for social dialogue

### Tool 2.1.1 Institutional framework for social dialogue in Norway

Norway facilitates social dialogue in the TVET sector by various means and on several different levels. Under the national law, the social partners have representatives, usually constituting the majority, in all important advisory bodies at national and county level for upper secondary TVET (including apprenticeship). The key bodies are listed below:

- the National Council for Vocational Education and Training (*Samarbeidsrådet for yrkesopplæring (SRY)*) gives strategic advice on quality issues
- nine sectoral vocational training councils (*Faglige råd*) advise on individual trades within their spheres of responsibility, curriculum development and quality issues
- the Vocational Training Board (*Yrkesopplæringsnemnda*) for each county advises on regional issues, including career guidance, regional development and the provision of apprenticeship in their county to meet local labour market needs
- trade-specific examination boards (*Prøvenemnder*) in each county are responsible for the trade and journeyman's examinations
- national and regional TVET appeals boards (*Klagenemnder*) deal with appeals in the event of failure in the trade and journeyman's final examination.

Source: Norwegian Directorate for Education and Training (2014) *Apprenticeship-type schemes and structured work-based learning programmes*,  
[https://cumulus.cedefop.europa.eu/files/vetelib/2015/ReferNet\\_NO\\_2014\\_WBL.pdf](https://cumulus.cedefop.europa.eu/files/vetelib/2015/ReferNet_NO_2014_WBL.pdf)

### Tool 2.1.2 Social dialogue platform in Germany

In Germany, a social dialogue platform supports the development of collaboration between the key partners in quality apprenticeship. The Board of the Federal Institute for Vocational Education and Training (BIBB) is the German government's statutory advisory body in fundamental matters relating to vocational education and training. Representatives of employers' and workers' organizations, Germany's federal states and the federal government work together on the Board, with each group having an equal share of the votes. One of the key responsibilities of the Board is to approve the draft vocational training regulations. The Board is supported by a standing committee, two subcommittees, working groups and the BIBB.

Other important social dialogue formats in Germany are located at the meso and micro level.

Source: [www.bibb.de/en/463.php](http://www.bibb.de/en/463.php)



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### Tool 2.1.3 Apprenticeship Steering and Technical Committees in Zanzibar

In Zanzibar, Tanzania, a Steering Committee and a Technical Committee direct the development and management of apprenticeship programmes. The two committees work closely together, with a clear division of roles and responsibilities between the stakeholders.

The Steering Committee acts as a strategic, advisory body in the development and implementation of apprenticeship programmes, cooperating with high-level government officials to ensure that the programme is properly aligned with the country's priorities, while the Technical Committee's responsibilities include performing technical-level activities and advising the Steering Committee on any issues relating to apprenticeship programme implementation.

Source: [https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1\\_254634](https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1_254634)

### Tool 2.1.4 Developing social dialogue skills through role play: A training exercise

The International Training Centre of the ILO (ITC ILO) and the ILO have developed a tool to build the social dialogue skills of government and social partners. This is a role playing exercise in which participants work on a fictitious apprenticeship example, playing the role of either the Government or an employers' or workers' organization (but which cannot be the participants' current role). This role playing exercise can be used during training programmes or in strategy development and planning meetings.

Source: [https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1\\_254635](https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1_254635)

## ▶ 2.2 Identifying skills needs in sectors and occupations

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### ***The issue: Why skills needs in different sectors have to be assessed***

Skills assessment and anticipation exercises are undertaken to assess current and future skills needs to enable countries to respond to changes in the labour market (ILO, 2015; OECD, 2016). Identifying skills needs is crucial for ensuring strong labour market relevance of apprenticeship programmes, which is one of the six building blocks of quality apprenticeships, as established in Toolkit 1 (refer to section 9.1 of Toolkit 1 for details on skills needs assessment and anticipation).

Employers who regularly assess their current and future skills needs are better prepared to plan strategies for human resources management and development. Skills needs information also supports career counselling and vocational guidance services to inform students' choices.

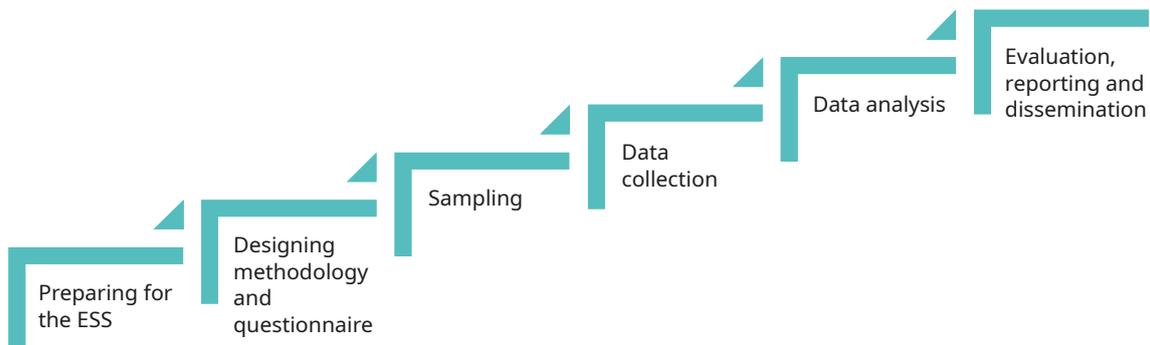


### ***The steps necessary for a skills needs assessment***

Good education and training systems should have information about skills needs and gaps that could form the basis for developing occupational profiles and apprenticeship programmes. If such information is not available, an apprenticeship working group, or other responsible entity, can take the following generic steps for a skills needs assessment:

- ▶ Decide the objective(s) of the apprenticeship programmes and their scope of implementation (e.g. national or limited to certain geographic regions and sectors). The selection of sectors is based on many factors, including growth and employment potential, as well as current and anticipated skills gaps in those sectors.
- ▶ Consult with the institutions responsible for labour market information (LMI), education and training, and employers' organizations at the national and sectoral levels to gain access to information on skills demand and supply for occupations in identified sectors.
- ▶ If reliable information is not available, identify the appropriate lead institution and partners for carrying out a skills needs assessment and choose an appropriate methodology. Employer/establishment skills surveys (ESSs) are an effective and efficient method that is widely used to collect information on enterprise skills needs and workforce development strategies (see Tool 2.2.5).

▶ Figure 2.1 Steps in an establishment skills survey



Source: Mane and Corbella, 2017.

In the development and implementation of an establishment skills survey, the lead body (e.g. an entity responsible for LMI, a research institution or an employer organization) should take the following steps:

- ▶ In close cooperation with a relevant employers' organization, develop a methodology for the ESS, including a questionnaire to determine skills needs at the national level or in a specific sector. For more details about the process, including the sample questionnaire, please refer to Tool 2.2.5.
- ▶ Carry out pilot testing of the questionnaire.
- ▶ Send the final questionnaire to enterprises and collect data.
- ▶ Analyse, validate and interpret the results of the survey by discussing them with employers' organizations and enterprises.
- ▶ Present and discuss the results of the survey with stakeholders (e.g. in social dialogue working groups).
- ▶ Disseminate the survey results to those involved in:
  - » career guidance, so that those entering apprenticeships and other programmes are aware of the trends in labour market demand (see section 4.1)
  - » qualification and curricula development, for developing or updating occupational profiles and the associated curricula used in apprenticeships (see section 2.3 below).
- ▶ Repeat the assessment regularly to track trends in labour market demand for skills.



## Tips

- ★ A comprehensive LMI system is the backbone of any education and employment strategy. No single methodology can generate sufficient knowledge of labour markets, so the right mix and complementarity of different methods is essential to gain a reliable and comprehensive overview of skills demand.
- ★ As the support of employers' organizations is crucial to the success of data collection, the lead body should encourage relevant enterprises to participate in the exercise through:
  - ▶ trust-building measures, such as inclusion in consultative social dialogue, which would encourage enterprises to share information about current and future skills needs, and
  - ▶ awareness-raising among enterprises about the benefits of skills needs assessment and the importance of their participation.
- ★ In principle, skills needs assessments might best be carried out by representatives from the world of work, such as employers' and workers' organizations, as they are best acquainted with the skills needs. Sectoral skills councils can also facilitate the process of identifying skills needs across each specific sector.
- ★ Data collection is a crucial factor. It should be carefully planned, piloted and supervised. The aim is to achieve a high response rate with the minimum number of missing values. Interviewers need to be carefully trained to elicit the most complete responses possible to questionnaires and to ensure high quality. The handling of the data collected is another crucial step in the process.
- ★ In the event that labour market information is not available and a pilot programme is to be implemented at a limited scale, simpler methodologies, using a combination of literature review, focus group discussions and interviews with key informants, can help in identifying the sector and occupations for the pilot programme.
- ★ Enterprises use a combination of approaches to decide the number of apprentices to be recruited; for example, Rolls Royce determines future needs for apprentices and interns based on factors such as:
  - ▶ availability of trainers for on-the-job training (1:1 trainer to trainee ratio)
  - ▶ production demand
  - ▶ employee turnover.



## **Tools for identifying skills needs in sectors and occupations**

The joint report *Approaches to anticipating skills for the future of work*<sup>1</sup> prepared by the ILO and OECD for the G20 Employment Working Group provides a set of principles for an effective skills assessment system. It summarizes various skills anticipation and forecasting methods, their requirements, advantages and disadvantages. It also includes a list of ILO tools for skills needs analysis and anticipation. For example, six guides produced by the ILO, ETF and Cedefop offer a wide range of methodologies that may complement each other (refer to box 33 of Toolkit 1). They include both qualitative and quantitative approaches and advocate strong social dialogue and institutions that are conducive to a better understanding of future skills needs. They provide professionals, policy-makers, researchers, social partners and experts with an overview of how different skills anticipation and matching methodologies can generate reliable labour market information, and how such information and evidence can be analysed and used for the development of policy interventions or adjustments in education and employment strategies.

In addition, the tools detailed below are used by practitioners at national, sectoral and enterprise levels in various countries.

### **Tool 2.2.1 Skills shortage research methodology, Australia**

In Australia, the National Skills Needs List identifies trades that are experiencing a national skills shortage. The Department of Employment undertakes detailed labour market research and analysis on an ongoing basis to identify skills shortages to underpin policy, planning and resource allocation. A key element of the skills shortage research is the Survey of Employers who have Recently Advertised (SERA), which collects two kinds of information about employers' experiences of recruiting skilled workers:

- The first is qualitative information gleaned from discussions with employers and recruitment professionals, which enables the identification of key labour market issues for each occupation.
- The second is quantifiable data about employers' recruitment experiences, including the proportion of vacancies filled and the number of applicants, qualified applicants and suitable applicants. This provides the basis for historical comparisons and analysis across states/territories and occupations.

The results inform a range of education, training, employment and migration policies and programmes and are publicly available.

Source: [https://docs.jobs.gov.au/system/files/doc/other/ss\\_methodology\\_0.pdf](https://docs.jobs.gov.au/system/files/doc/other/ss_methodology_0.pdf)

<sup>1</sup> See [https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/g20/reports/WCMS\\_646143/lang-en/index.htm](https://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/g20/reports/WCMS_646143/lang-en/index.htm) [6 Dec. 2019].

### **Tool 2.2.2 How to conduct a quick and simplified sector analysis, Asian countries<sup>2</sup>**

This tool provides steps, processes and a template for selecting sectors (refer to annex 1 of the tool).

Source: GIZ (2017) *Down to earth: A practitioner's guideline to work with business and industry in TVET*, [https://sea-vet.net/images/seb/e-library/doc\\_file/311/giz2017down-to-earthguideline-version-2.pdf](https://sea-vet.net/images/seb/e-library/doc_file/311/giz2017down-to-earthguideline-version-2.pdf)

### **Tool 2.2.3 Questionnaire for sector selection and assessment of frame conditions, DC dVET**

Ideally, the selection of sectors is based on a comprehensive sector analysis. Once a number of promising sectors have been identified, a “quick-and-simplified sector analysis” could be applied to assess the potential for increasing the engagement of the business sector. This online questionnaire enables the analysis of three selected sectors. Each sector is evaluated against a set of criteria, which are derived from the relevant frame conditions, i.e. societal, political/legal and economic. Respondents to the questionnaire are required to reflect on whether the relevant frame conditions in the local context are conducive to the engagement of the business sector or not.

Source: [https://www.dcdualvet.org/wp-content/uploads/DC-dVET\\_Working-Tool-Business-Sector\\_Questionnaire\\_ENGL-1.pdf](https://www.dcdualvet.org/wp-content/uploads/DC-dVET_Working-Tool-Business-Sector_Questionnaire_ENGL-1.pdf), pp. 3–6.

### **Tool 2.2.4 Sector skills plan of merSETA, South Africa**

In South Africa, each Sector Education and Training Authority (SETA) develops a Sector Skills Plan (SSP) that serves as a comprehensive document outlining the skills demand and supply and resultant skills gaps in the sector. These skills gaps (scarce or critical skills) inform the development of priority actions aimed at addressing skills needs in the sector. This plan is from Manufacturing, Engineering and Related Services SETA (MerSETA), one of the 21 SETAs, and includes information about the research methodology employed in producing information about skills demand and supply. The methodology uses a combination of both primary and secondary research.

Source: [http://merseta.org.za/KnoRep/SECTOR%20SKILLS%20PLANNING/merSETA%20Sector%20Skills%20Plan%202017\\_18%20-%202021\\_22.pdf](http://merseta.org.za/KnoRep/SECTOR%20SKILLS%20PLANNING/merSETA%20Sector%20Skills%20Plan%202017_18%20-%202021_22.pdf)

<http://merseta.org.za/KnoRep/Pages/SECTORSKILLSPLANNING.aspx>

<sup>2</sup> The source publication was developed by the Community of Practice “Private Sector Cooperation in TVET” within the GIZ Sector Network Assets for Asia. The Community of Practice comprises GIZ staff (international experts, national personnel, integrated experts and development advisers) from the following Asian countries: India, Indonesia, Lao People’s Democratic Republic, Mongolia, Myanmar, Pakistan, Sri Lanka, The Philippines, Thailand and Viet Nam.



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### Tool 2.2.5 **Guide on employer skills survey, ILO/ETF/Cedefop**

The guide, which is part of the ILO, ETF and Cedefop series of guides on skills anticipation and matching, covers the development and implementation of an employers skills survey (ESS). Such surveys are designed to generate data on employers' skills needs and their human capital development strategies. If carried out regularly, the surveys help to analyse trends in skills needs and identify potential skills bottlenecks.

The guide provides information to help institutions running an ESS to determine what is necessary at each stage of its development. It provides tips and methodological discussions on the main issues in each phase of survey development, the decisions that have to be made and what the outcome of each phase should be.

Source: [www.ilo.org/skills/pubs/WCMS\\_548324/lang--en/index.htm](http://www.ilo.org/skills/pubs/WCMS_548324/lang--en/index.htm)

### Tool 2.2.6 **Workforce planning, including for apprentices at company level, the United States**

Effective workforce planning is the foundation for creating workforce strategies that are closely aligned with business needs. The *Employer's playbook for building an apprenticeship program* explains what workforce planning is, details its various approaches and components and provides key information for its successful implementation. Furthermore, this guide provides sample tools that can facilitate workforce planning at a company level, such as a detailed workforce development project plan and a strategic job gaps worksheet, among others.

Source: [www.themanufacturinginstitute.org/~media/53456D700856463091B62D1A3DA262F4/Full\\_Apprenticeship\\_Playbook.pdf](http://www.themanufacturinginstitute.org/~media/53456D700856463091B62D1A3DA262F4/Full_Apprenticeship_Playbook.pdf)

In addition to the above tools, chapter 3 of the ILO's guide to apprenticeships for enterprises (ILO, 2018) provides detailed insight into how selected enterprises decide to take on the apprentices.

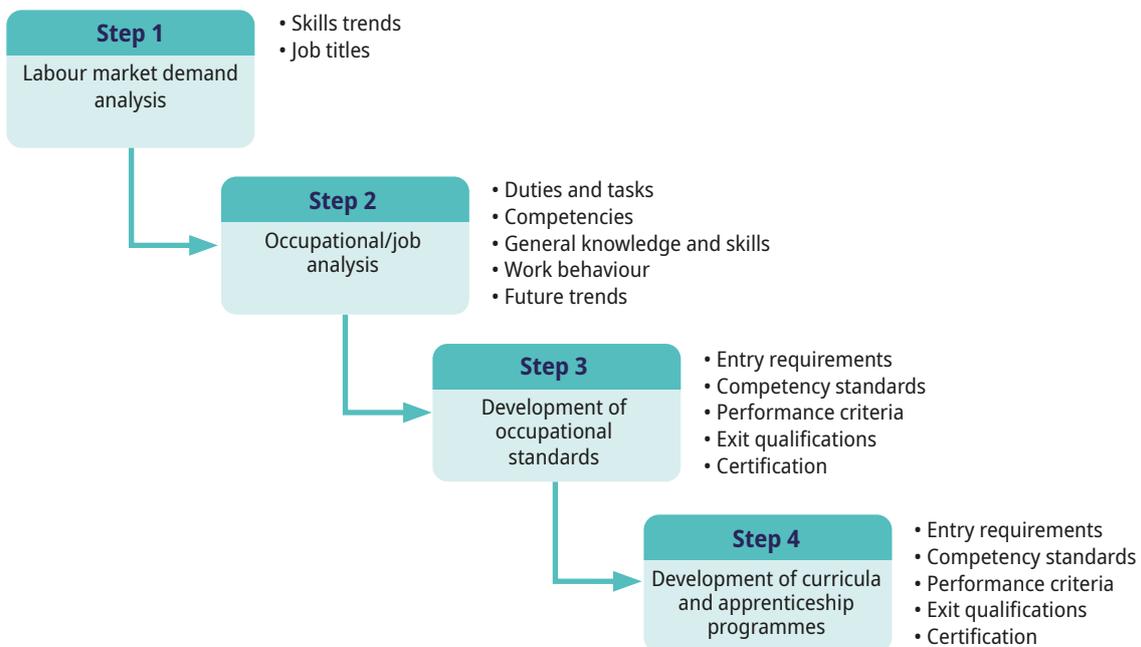
## ▶ 2.3 Developing occupational profiles and curricula based on skills needs assessments



### *The issue: Why clearly defined occupational profiles are necessary for curriculum development for apprenticeships*

Once skills needs have been identified, the next stage is to develop occupational standards<sup>3</sup> (also referred to as occupational profiles in some countries), which are in turn used to develop competency-based curricula (or outcome-based curricula). Figure 2.2 depicts the four steps in the development of curricula from labour market skills demand analysis.

▶ Figure 2.2 Developing curricula based on labour market demand analysis



Source: Adapted from E-TVET Council, 2015.

Since occupational standards (OSs) are linked directly to the competencies needed to perform a job and are defined in collaboration with the employers' representatives, a competency-based curriculum (CBC) developed based on OSs would ensure a close link between apprenticeship programmes and labour market needs.

In Germany, "competence means the ability and willingness of the individual to use knowledge and skills as well as personal, social and methodical capabilities and to behave in a thoughtful

<sup>3</sup> The term "occupational standard" provides an official description of the specific competencies needed to carry out a particular occupation and the performance requirement to judge such competencies, as agreed by a representative sample of employers and other key stakeholders. Descriptions of occupational profiles or standards vary between countries.

and individually and socially responsible manner. The qualifications are described on the basis of the competence categories, ‘professional competence’ and ‘personal competence’, each of which is again divided into two subcategories (professional competence: ‘knowledge’ and ‘skills’, personal competence: ‘social competence’ and ‘independence’)” (Tool 2.3.1).

### Box 2.2 What does a training regulation stipulate in Germany



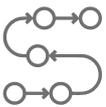
In Germany, a training regulation (akin to the term “national curricula” in some countries) for each occupation determines:

- the designation of the training occupation
- the duration of the training – which shall be not less than two and not more than three years (most programmes are of three years’ duration but some programmes run for two years or three-and-a-half years)
- the description of the training occupation – the typical “skills, knowledge and capabilities” of the profession in summary form
- the framework training curriculum – a guide to how the teaching of skills, knowledge and capabilities is to be structured in terms of content and time
- the examination requirements.

The curricula formulated in the training regulations represent minimum standards. Each enterprise therefore has the option to include other topics in its training and to offer apprentices additional qualifications.

Source: BIBB, 2014.





## ***The steps involved in developing an occupational standard and, on that basis, establishing a curriculum***

### ***Developing an occupational standard***

- ▶ As discussed in section 2.1 above, apprenticeship stakeholders, including the responsible TVET agency or other competent body, should convene a working group to prepare a proposal for a new or revised OS. Box 2.3 gives an example of the components required in an OS in Jordan.
- ▶ The working group may choose an appropriate methodology for developing OSs, such as Developing a Curriculum (DACUM), job analysis, functional analysis (refer to Tool 2.3.3 for more details) or SFIVET's situation-based approach.

#### **Box 2.3 Content of an occupational standard, Jordan**



OS format in Jordan includes the following components:

- Cover page: occupation title, occupational level, ASCO code, ISCO code, names of the OS development team, endorsement and approval authorities, approval and review dates.
- Occupational summary: occupational definition, main knowledge, skills and attitudes required, occupational hazards, work environment, possible jobs, career pathways, future trends and concerns, special legal provisions.
- Employability competencies.
- Occupational/technical competencies.
- Performance criteria.
- Equipment, tools and materials list.

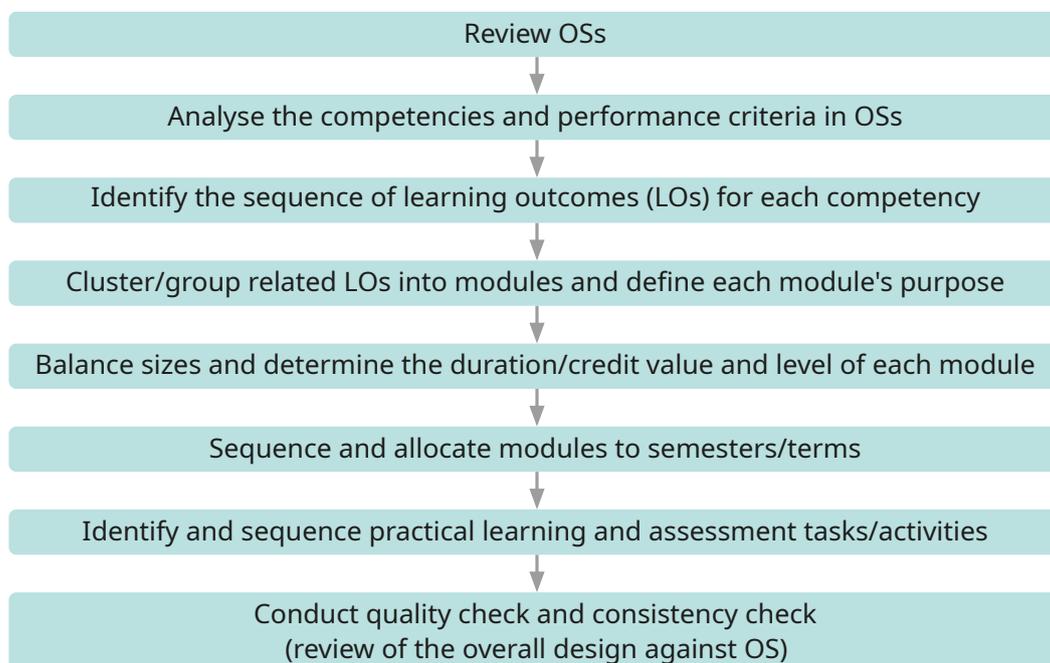
Source: Tool 2.3.3.

- ▶ The main steps involved in developing an OS are:
  - » identification and definition of the occupation
  - » identification and training of key stakeholders and experts
  - » identification of key groups of tasks, functions and skills relevant to the occupation
  - » identification and analysis of learning outcomes (knowledge, skills and attitudes) for each key group of tasks
  - » drafting of the complete OS using the established format
  - » verification of the OS by sector experts and recommendations for further improvement.
- ▶ Once consensus has been reached, the TVET agency, or other competent body, should publish the OS.

### Establishing a curriculum

- ▶ Based on the OS, a responsible entity (which may be the working group that has developed the OS or some other body, such as the TVET agency) develops the curriculum. The steps involved are illustrated in figure 2.3.
- ▶ The curriculum should reflect details of on-the-job learning in the workplace and off-the-job learning via the TVET provider. It may require, as in Germany, the development of two separate but coordinated curricula for on- and off-the job learning, respectively (refer to section 9.3 of Toolkit 1 for the processes of developing training regulations in Germany and curricula in Ireland). In some cases, training may also take place at an intermediary organization, which should be specified in the curriculum.

▶ Figure 2.3 Developing curricula based on occupational standards



Source: Adapted from E-TVET Council, 2015.



## Tips

- ★ Curricula should offer flexibility to enable enterprises to integrate enterprise-specific content. An appropriate percentage could be set to specify the degree of flexibility allowed.
- ★ The occupational profiles must reflect not only the immediate skills needs of enterprises, but they must also correspond to the long-term needs of the younger generation entering the labour market. Therefore, the occupational profiles must be sufficiently broad and go beyond immediate occupational requirements to support development of the core skills for employability that underpin lifelong learning.



## **Tools for developing curricula using occupational profiles**

### **Tool 2.3.1 Development of training regulations, including occupational profile, Germany**

This tool provides information on a procedure for the development of training regulations which define the standards and minimum requirements for a training course. Experts from training practice develop the outlines of the new training regulations in collaboration with the Federal Institute for Vocational Education and Training (BIBB) and harmonize them with the draft framework curricula for off-the-job training in schools. This procedure is well-established and well-respected and it involves those affected – employers’ organizations for the enterprises and workers’ organizations for employees – in all important decisions concerning the content, objectives, duration and requirements of training.

Source: [www.bibb.de/veroeffentlichungen/en/publication/download/7324](http://www.bibb.de/veroeffentlichungen/en/publication/download/7324)

### **Tool 2.3.2 Handbook for developing curricula using occupational profiles, Switzerland**

The relevance of curricula to labour market needs is key for apprenticeship systems. In Switzerland, the initiative for developing new qualifications or updating existing ones comes from the relevant professional associations (employers’ bodies). Based on an analysis of the current and future skills needs of companies in the relevant sectors, competence-oriented occupational profiles (“qualification profiles”) are drafted in a collaborative exercise which involves all relevant stakeholders (private sector, national authorities and local authorities responsible for VET schools). “Ordinances” setting out the skills requirements in target occupations and other relevant documents are then drafted based on these profiles and discussed with all relevant stakeholders before being implemented.

This handbook provides a comprehensive overview of the topic, including information on essential aspects and processes of developing or modifying occupational qualifications and reference documents.

Source: Handbook for IVET curriculum development (in French):  
[www.sbfi.admin.ch/dam/sbfi/fr/dokumente/2017/03/HB\\_BE.pdf.download.pdf/Handbuch\\_Prozess\\_der\\_Berufsentwicklung-20170328f.pdf](http://www.sbfi.admin.ch/dam/sbfi/fr/dokumente/2017/03/HB_BE.pdf.download.pdf/Handbuch_Prozess_der_Berufsentwicklung-20170328f.pdf)

**Tool 2.3.3 Guide for developing curricula based on occupational standards, Jordan**

This guide focuses on the processes involved in developing OSs based on the DACUM approach and offers guidance on developing curricula based on principles of competency-based training.

It describes the sequence of activities needed to develop competency-based curricula (CBC) (also called learning outcome-based curricula) based on OSs. The guide elaborates on the contents of OSs and how to systematically devise and review them, and it provides guidelines for the process of using the competencies and performance criteria established in an OS to specify the learning outcomes and assessment criteria of the curriculum, and information on arranging these into modules.

Source: [https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1\\_254640](https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1_254640)

**Tool 2.3.4 Manual for developing qualification and occupational standards, Bosnia and Herzegovina**

The manual is designed to explain and facilitate the development of multiple qualifications standards and OSs in Bosnia and Herzegovina. It clarifies the role of occupational and qualifications standards and how to gain maximum benefit from them at the individual, institutional and country level. Among other things, the manual advises and supports higher education institutions in the development of innovative, high-quality study programmes.

Source: [https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1\\_254628](https://www.skillsforemployment.org/KSP/en/Details/?dn=EDMSP1_254628)

**Tool 2.3.5 A guide to developing and implementing qualifications that meet industry needs, VET Toolbox, British Council**

This tool is a guide which sets out, in practical and comprehensive terms, how qualifications that meet industry needs can be designed and delivered.

Source: <https://www.vettoolbox.eu/en/resources/guide-developing-and-implementing-qualifications-meet-industry-needs>

**Tool 2.3.6 Examples of occupational standards from the United Kingdom, Germany, Canada and Australia**

The American Institute for Innovative Apprenticeships has grouped the standards for a range of occupations in the four countries into ten broad categories, detailing the OSs in each category.

Source: <https://innovativeapprenticeship.org/occupational-standards/>

### **Tool 2.3.7 A sample apprenticeship standard for a boatbuilder programme, England**

In England, the apprenticeship standard is developed by an employer group under the auspices of a government agency – the Institute for Apprenticeships. In this example of the new boatbuilder programme, the apprenticeship standard sets out the skills, knowledge and behaviours required of a qualified boatbuilder. A separate linked document then sets out how these are to be assessed at the end of the apprenticeship programme. Curricula are then developed locally, but must be consistent with the standards and the final assessment criteria.

Source: [www.instituteforapprenticeships.org/apprenticeship-standards/boatbuilder/](http://www.instituteforapprenticeships.org/apprenticeship-standards/boatbuilder/)

### **Tool 2.3.8 A sample curriculum for the qualification of electrician (steel plant), India**

The example given in this source shows the format used in India for the qualification standards for apprenticeship programmes. The details include the national skills qualification framework level, learning outcomes, assessment standards and methodology, a list of tools and equipment required for basic training, time allocation for practical training, theory, employability skills and other subjects, as well as a job profile description and career progression pathways in the sector. It also provides the names of the experts from industry and the training system who developed the standards and syllabus.

Source: [https://nqr.gov.in/sites/default/files/Electrician%20%28Steel%20Plant%29\\_ATS\\_NSQF-5\\_0.pdf](https://nqr.gov.in/sites/default/files/Electrician%20%28Steel%20Plant%29_ATS_NSQF-5_0.pdf)

### **Tool 2.3.9 Transferable skills in vocational education and training, VET Toolbox, GIZ**

The objective of this tool is to provide guidance to support the development of transferable skills to improve the employability of young labour market participants in countries where large-scale investment projects are expected to offer jobs and self-employment opportunities.

This manual offers guidance on the specific transferable skills to target, detailing why and when are they especially useful and clarifying the contexts in which these skills are most applicable.

Source: [https://www.vettoolbox.eu/drupal\\_files/public/2019-08/Transferable%20skills.pdf](https://www.vettoolbox.eu/drupal_files/public/2019-08/Transferable%20skills.pdf)

### **Tool 2.3.10 Conceptual and programmatic framework for life skills and citizenship education in the Middle East and North Africa, UNICEF**

This conceptual and programmatic framework reimagines life skills and citizenship education – while addressing both the conceptual and the programmatic gaps – with a view to achieving scale, sustainability and long-term change in quality learning. It is aimed at policy-makers, practitioners and experts and is meant to serve as a basis for guiding policies, strategies and programmes through a systems approach and in the context of national education reforms.

Source: [www.education2030-arab-states.org/PDF/d816129f-5d08-40d1-9984-d587631e1b14\\_report1.pdf](http://www.education2030-arab-states.org/PDF/d816129f-5d08-40d1-9984-d587631e1b14_report1.pdf)

## ▶ 2.4 Providing instructional and learning materials

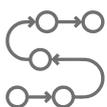


### ***Good instructional and learning media are vital to quality apprenticeships***

“[Even a] skilful carpenter cannot build a house without the necessary tools and materials. Much more so, a qualified teacher cannot mould the hearts and minds of the learners or develop their social and professional skills and abilities without the necessary tools and materials” (Education International, n.d.). Teachers and trainers need modern instructional media and tools to improve the effectiveness of learning processes, cater to the special needs of learners and increase outreach to learners in remote areas and those with learning disabilities. Good instructional materials help to minimize the disparity in the quality of teaching provided by different teachers.

With the advancement of new technologies, instructional materials also increasingly offer flexibility to learners, to learn at any point in time, in any place and at their own pace. Instructional and learning materials used in apprenticeships today commonly include both ICT-based media – mobile-based applications, virtual reality, augmented reality, animation, presentations, videos, films and other interactive learning materials – and traditional printed materials, including textbooks. Instructional and learning materials also include social media and massive online courses.

Institutions responsible for apprenticeships should promote the use of modern instructional materials by investing in the development of relevant media, making them accessible, and developing the capacity of teachers, trainers and apprentices in using them.



### ***The steps for ensuring that good instructional and learning materials are accessible to teachers, trainers and apprentices***

The national TVET agency, or other entity responsible for the development of instructional material, should:

- ▶ develop a strategy for instructional materials
- ▶ identify existing instructional materials and the institutions that specialize in developing them
- ▶ develop partnerships with specialist institutions to adapt and improve existing materials or develop new ones
- ▶ invest in modern facilities and ICT to make instructional and learning materials available online
- ▶ raise awareness among teachers, trainers and apprentices about the availability and benefits of the instructional materials
- ▶ train teachers, trainers and apprentices in using the available materials
- ▶ enable flexibility for teachers and trainers in developing and adapting materials.



## Tools for instruction and learning



### Tool 2.4.1

#### REALTO – Online platform to capture experiences, create learning content and connect different learning venues in Switzerland

While apprenticeship programmes offer a lot of advantages, they also pose certain challenges. One of these challenges is that apprentices often perceive a discrepancy between what they learn at school and the skills they need in the workplace. Addressing this discrepancy requires a systematic integration of theoretical and practical knowledge. REALTO is a next-generation online platform for VET that sets out to strengthen such integration. It creates a shared digital space, offering apprentices the capability to store and share their experiences captured in photos, videos and texts. This online platform provides further support for teachers with the creation of learning activities, which illustrate the relevance of the theoretical concepts to the workplace.

The existence of this shared space enables a connection to be made between the student, teacher and supervisor. All stakeholders are able to access information about the academic and vocation-specific progress of the student, and to offer and coordinate support where needed.

Source: <http://about.realto.ch/language/en/>



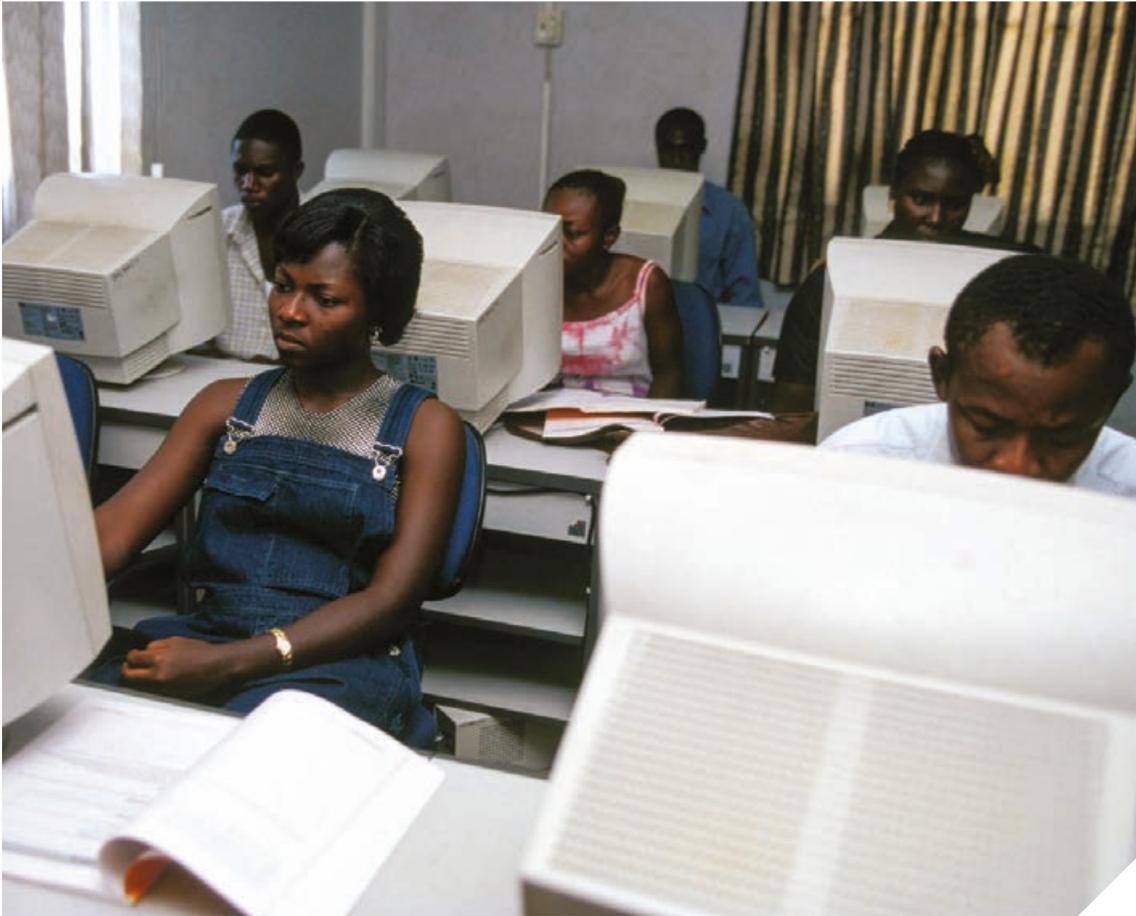
### Tool 2.4.2

#### Online learning management system, including mobile app for occupational competence, South Korea

The Human Resources Development Service of Korea (HRD Korea) online training packages offer everyone the opportunity to develop occupational competencies free of charge, from any location via mobile phone, tablet or PC. Workers and apprentices can obtain a certificate for the modules which they successfully complete online. The main components of the online training packages are as follows:

- **Mobile app services:** Any user can download an app called “Human Resources Development Service of Korea” via Google Play and Android App Store. This mobile app facilitates online learning for the acquisition of technical skills for occupations such as automotive technician, electrical technician, electronics engineer, hairdresser and make-up artist.
- **Online training materials:** E-books and PDF files are available for vocational competency development and assessment.
- **Flash video:** Flash videos are available for various fields including applied software engineering, automotive technology and management, and green car management.

Source: <http://hrdbank.net/portal/main.do> (in Korean)



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### Tool 2.4.3

#### Instructional material including 3D animated models, India

India's National Instructional Media Institute (NIMI) has been functioning as a nodal agency for the development of instructional materials, e-content and question banks to train media developers, trainers and trainees, enable translation of books into Hindi and other regional languages, network with other vocational stakeholders, create resource centres for vocational courses, promote research in the field of instructional materials development and offer consultancy services.

NIMI's centralized pool of instructional materials offers apprentices and trainees access to a variety of digital content, such as videos, 3D PowerPoint presentations, question banks and interactive flip e-books. NIMI's interactive e-books incorporate embedded videos, quizzers and 3D models animated with rotation and exploded views, while QR codes in books allow users to watch related embedded videos.

A sample book with QR codes can be found here:

[https://bharatskills.gov.in/pdf/E\\_Books/Electrcian\\_SEM1\\_TP.pdf](https://bharatskills.gov.in/pdf/E_Books/Electrcian_SEM1_TP.pdf).

Source: <http://nimi.gov.in/index.htm>

### **Tool 2.4.4 Training and assessment implementation aids, Germany**

Through this guidance, the German TVET agency BIBB offers implementation aids for various vocational training occupations. Each aid provides guidance on the training regulation for a specific occupation for in-company trainers, TVET teachers, examiners and apprentices. These aids are always published when the occupation or training regulation changes and, therefore, also explain the reasons for the need for revision and detail the updated components. In general, they provide information on the occupation as well as career and training opportunities. TVET practitioners are guided through the process of implementing apprenticeships for a specific occupation, both in companies and in schools. Finally, information and guidance is offered on the implementation of examinations.

Source: [www.bibb.de/de/654.php](http://www.bibb.de/de/654.php) (in German)

### **Tool 2.4.5 Learning material for apprentices, Austria**

In Austria, comprehensive information and assistance for the implementation of quality apprenticeships is available (only in German). The resources include manuals for in-company training. The occupation-specific training guides also contain tips and best-practice examples from experienced trainers. This information can be used to check what the apprentice has already learned: electronically, directly in the PDF or in the printed version. Apprentices can prepare themselves and get an overall impression of the apprenticeship examination through the examples of the theoretical and practical examinations provided.

Source: [www.qualitaet-lehre.at/downloads/ausbildungstools/ausbildungsleitfaeden/](http://www.qualitaet-lehre.at/downloads/ausbildungstools/ausbildungsleitfaeden/)  
[www.qualitaet-lehre.at/](http://www.qualitaet-lehre.at/)  
[www.lap.at/index.php](http://www.lap.at/index.php)

### **Tool 2.4.6 A handbook for instructors on managing a training workshop to maximize learning potential, Viet Nam**

This tool provides support for improving workshop management in compliance with standards of health protection and work safety. It presents workshop management tools and criteria for efficient workshop organization, as well as a questionnaire on performance assessment of workshop management. The document can be used as a daily handbook to help teachers/instructors understand the process and the steps that need to be taken, as well as verifying their commitment to fulfilling the requirements of effective workshop management.

Source: [www.tvet-vietnam.org/kontext/controllers/document.php/668.d/d/1e8574.pdf](http://www.tvet-vietnam.org/kontext/controllers/document.php/668.d/d/1e8574.pdf)

## ▶ 2.5 Checklist

By completing the following checklist, readers of this Toolkit can revisit the key elements involved in developing apprenticeship programmes and also carry out a rapid assessment of the functioning of related systems. It will assist readers to identify the elements that could be improved and to assess whether additional measures are needed.



Developing quality apprenticeship programmes	Yes	No	Needs improvement	Remarks
Are there specific measures in place for engaging workers' and employers' organizations in apprenticeships?				
Is there a social dialogue mechanism or institutional framework in which workers' and employers' organizations and government institutions work in partnership on apprenticeship delivery?				
Do the recommendations from social dialogue inform the further development of apprenticeship programmes?				
Does social dialogue create opportunities to improve the reputation of apprenticeships?				
Is there a mechanism in place for assessing current and future skills needs in the relevant sectors?				
Are employers actively involved in skills needs assessments?				
Are the results of skills needs assessments used to develop or improve occupational profiles?				
Do the results of skills needs assessments inform career guidance activities?				
Do occupational profiles correspond with the actual requirements of the relevant occupations?				
Does the apprenticeship curriculum allow enough flexibility for TVET teachers to adapt it to various learning situations?				
Does the apprenticeship curriculum allow enough flexibility for employers to adapt content to employers' specific training needs?				

The questions to which readers have answered “No” or “Needs improvement” point to gaps where measures to improve or strengthen the development of apprenticeship programmes in their contexts should be considered. It is important to keep in mind that the involvement of social partners, including workers’ and employers’ organizations, in the design, development and implementation of apprenticeships is a key factor for the success and sustainability of apprenticeship programmes.

*When you look at apprenticeship systems around the world, the most important success denominator is practically always social dialogue. Apprenticeships work because they link classroom and workplace training and because they tap the knowledge of both employers and workers on what training is needed and how to deliver it.*

ILO Director General, Guy Ryder, speaking at the launch of the B20 and L20 “Joint understanding on key elements of quality apprenticeships”, 18 June 2013, in Geneva

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