Teaching/learning materials for the further training module

Vocational orientation in the industrial-technical sector”

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Content

Comment

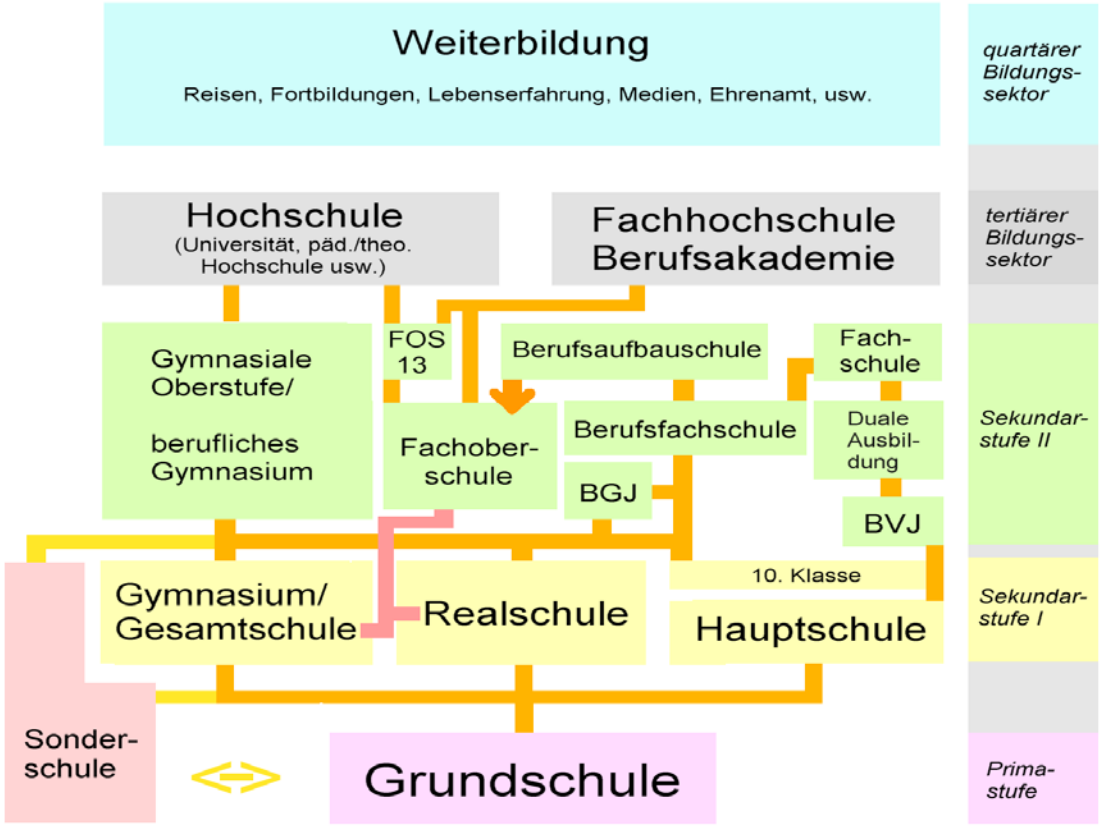
The following teaching/learning materials are a selection of materials that may be supplemented by the qualifier or, under certain circumstances, adapted to the national and regional characteristics of the employment / training market

The teaching/learning materials compiled here include partly notes on usable materials from the Internet as well as information about the aspects that have to be taken into account for the individual learning units by the qualifier. To simplify the assignment of the teaching / learning materials to the teaching / learning units, these were denoted according to the "Content Table for the Qualification Module – Vocational orientation in the industrial-technical field" with the respective number of the corresponding teaching / learning unit (A0, A1- A4).

A0 – Basics of vocational training and vocational orientation (A1 – A4)

A1 – National VET system

Structure of the national VET-system (Example for Germany – other user from other counties can use a graph of their system)



(Source:https://upload.wikimedia.org/wikipedia/commons/0/07/Deutsches_Bildungssystem2.png, 06/2018)

See graphic above and a short description of VET system of Germany under source: http://www.cedefop.europa.eu/files/5173_de.pdf

Possibilities of the German VET system

- Training in the dual system = apprentices are employed in a training company which is recognized by the relevant chamber and complete their practical training there. At the same time they attend the vocational school to acquire the theory.
- Training as a full-time school education = Numerous professions, especially in the healthcare sector, are trained at technical schools, such as physiotherapists, other kind of therapists
- University entrance = Can be acquired 1. with the university entrance qualification or 2. through a vocational education
- Technical college entrance = Can be obtained with the advanced technical college entrance qualification
- Further vocational training = can be used by people who have already learned a profession and who want to continue the education

A2 – Vocational fields and (training) professions in the industrial-technical sector

Vocational fields:

1. **Metal professions**
   These are professions that deal primarily with metal such as drilling, turning, milling, grinding, cutting and joining as well as producing whole components. In comparison to the craftsmanship, it is primarily about the production of large products or the production in series such as: Production facilities, ships, railways, aircraft, cars etc.
   Professions (3,5 years of training):
   - → systems mechanic
   - → industrial mechanic
   - → design mechanic
   - → automotive mechatronics
   - → machine mechatronics
   - → tool mechanic
   - → cutting machine operator

2. **Electrical/Electronics professions**
   These are professions that have to do with electronics and that basically ensure that electricity flows and different systems operate electrically or electronically. In the professions, electronic components are planned, manufactured and installed, and whole systems and controls of e.g. air conditioning, production equipment and buildings are installed and designed. In addition, the removal of faults beside the installation of equipment belong to the work area
   Professions (3,5 years of training):
   - → electronic technician for automation technology
   - → electronic technician for operating technology
   - → electronic technician for building and infrastructure systems
   - → electronic technician for devices and systems
   - → electronics technician for information and system technology
   - → electronic technician for machine and drive technology
   - → aircraft electronic technician

3. **IT-professions**
   These are professions in the field of information technologies. On one hand these are programmer and technicians and on the other hand commercial or technical professions, in which IT solutions are developed or companies are networked. In addition, the troubleshooting and customer service is one of the tasks.
   Professions (3 years of training):
   - → Qualified IT specialist
   - → computer science salesman / woman
   - → IT system electronic technician
   - → IT system businessman / woman

4. **Commercial professions**
   These are commercial professions with a connection to the metal and electrical industry, in which the purchase of materials and the distribution of the products fall. They take over all commercial tasks in the industrial-technical field from the order acquisition to the delivery of goods to customers. They refer to the industrial-technical professions, but do not count directly to them.

Professions (3 years of training):

- → wholesale and foreign trade merchant / woman
- → industrial clerk / woman
- → businessman / woman for office management
- → merchant for forwarding and logistics services

5. **Further professions**
   This includes all industrial-technical professions that are not part of the above mentioned basic occupations in the field of metal and electrical and that cannot assign to them.

- → electric plant fitter
- → specialist for warehouse logistics
- → specialist metal technology
- → qualified engineering tradesperson (fabrication)
- → aircraft mechanician
- → mechanician for foundry
- → industry electrician
- → machine and plant operator
- → mechatronic
- → microtechnologist
- → surface coaters
- → production technologist
- → typesetting and forming mechanics
- → technical production designer
- → process technologist
- → process mechanic - coating technology
- → materials tester
- → technical draftsmen/women (for different fields)

(Source: ME-professions, https://www.me-vermitteln.de/berufe - Here, the requirements and possibilities of the professions are described in detail and it can be downloaded different teaching materials for lessons regarding vocational orientation and MINT lessons)

Further professions you can find here:

https://www.arbeitsagentur.de/download-center-biz-berufsfeldubersichten

A3 – Overview of vocational orientation in general

Example for Germany – that has to be adapted by the user of the materials with regard to national system

1. General vocational orientation: The responsibility for the implementation is by of the Federal Employment Agency (FEA) and serves as 1. the preparation of young people and adults for the choice of occupation and 2. to inform training seekers, jobseekers, employees and employers. It contains comprehensive information and advice on career choice issues, professions and their needs and prospects, ways and means of support in VET, and occupationally significant developments in companies, administrations and the labour market. These are purely informal consultations, which are held in one-on-one talks or partly also in the form of information events e.g. to be done in schools.

2. In-depth vocational orientation: It includes the possibility to prepare pupils of general education schools for their career choices by means of measures. The duration of the measures covers a period of more than 4 weeks and takes place during the lesson-free period. The measures must be promoted to 50% by third parties.

3. Extended in-depth vocational orientation: It includes the possibility to prepare pupils of general education schools for their career choices by means of measures and to support them. The duration of the measures covers a period of up to 4 weeks and takes place during the lesson-free period. The aim is to increase the vocational choice competence of young people in order to promote their orientation and decision-making process. These are supplementary offers in addition to the general vocational orientation of the BA and at schools, which give the young people a deeper insight into the professional and working world and support them even better in choosing a career. These are measures which enable young people to gain direct experience by trying out and getting to know training companies and professions. The measures must be promoted to 50% by third parties.
In addition to the legal tasks of the FEA with regard to the implementation of vocational orientation, the VO should also be supported by the family, the school and the economy. Before the in-depth and expanded in-depth vocational orientation always the general vocational orientation have to be done. In addition, variants 2 and 3 should help to provide individualized advice in a more structured and targeted manner, because so experience gained over a longer period of time can be evaluated individually and taken into consideration.

Target groups of the FEA as part of their vocational orientation mandate:

a) directly

- SchülerInnen mit Migrationshintergrund
- FörderschülerInnen
- SchülerInnen Sek I
- SchülerInnen Sek II
- pupils with a migration background
- special needs pupils
- pupils sek I
- pupils sec II

b) indirect = supporter and multiliers of the career choice process

- parents
- teachers
- school managment
- social workers
- school psychologists
- career entry supporter
- mentors
- coaches

These should and will be informed about possible measures planning and should be included in preliminary considerations. In addition, they should contribute to a sustainable guarantee of the effects and results of measures and incorporate them into the school and family vocational orientation.

Provider of extended vocational orientation measures: FEA, general education schools, general education providers, foundations, public and business support institutions (e.g. chambers, guilds, business associations), institutions that offer VO measures (e.g. open youth work providers) (vgl. Handbuch Vertiefte Berufsorientierung, Bundesagentur für Arbeit, 2010)

Complementary institutions in the implementation and initiation of vocational orientation measures / activities:

School boards, parents 'councils, coordination centers school - job, integration council, youth welfare offices, training companies, employers' associations, professional associations, municipalities, universities, trade unions, counseling centers for vocational orientation

Creation of further vocational orientation measures:

Much of the vocational orientation measures are developed and initiated by the different institutions involved in vocational orientation. These are mostly individual projects, which are closely aligned with the target orientation of the respective institution, the needs of the target group to be addressed and the regional framework conditions. In addition, more emphasis is placed on family and self-initiated vocational orientation. In addition to the private commitment and the legal mandate of the FEA for the implementation of vocational orientation activities and measures, the general education schools are responsible for carrying out vocational orientation. While, for the most part, in the curriculum frameworks, e.g. the establishment of application documents and professional internships or information events are firmly anchored, but other concrete measures and the implementation can be freely created by the schools. The individual creation and implementation of vocational orientation measures in schools can be primarily traced back to the different regional framework conditions on the training market, the needs of the respective pupils and the commitment of the individual schools or the responsible teachers.(vgl. Summarization of the investigation results – status quo and good practice of vocational oroentation, Chapter 1, www.bouqua.eu)

A4 – Legal basis of vocational orientation

The Implementation of VO is mainly provided in the transition from school to work and for young people who have not found a training / apprenticeship and young adults or adolescents who are not yet ready for a vocational training after completing their schooling. In addition to the vocational orientation at general education schools, where this is anchored in the framework curricula, **general vocational orientation** is provided by the Federal Employment Agency (FEA) (presented in §33 SGB III Sentences 1 and 2). These are differentiated into a **in-depth vocational orientation** (presented in §33 SGB III Sentences 3 to 5) as well as the **extended in-depth vocational orientation** (presented in §421q SGB III), which are legally anchored in the Social Code.
The funding is provided by the institution implementing the VO (e.g. schools, Federal Employment Agency)

B0 – Basics of vocational orientation in the industrial-technical sector (B1 – B5)

B1 - Changes against the background of digitalization

Note: See ppt B1_Digitaiisierung

B2 – Actors in vocational orientation in the industrial-technical sector

With a focus on vocational orientation in the industrial-technical field, different actors and institutions cooperate with each other:

→ FEA
→ Chamber of Commerce and Industry
→ Noumerous professional associations (such as. VDI, Nordmetall, Gesamtmetall, VDE)
→ Business associations
→ schools
→ Parents
→ Unions

Federal Employment Agency (FEA):

They carry out VO, do consutations in this field, try to find training companies and promote the reduction of training drop-outs, economical use of measures and successful graduate management. This is done against the aim to support the transition school – job, entrance to other services of the FEA for young people and the coordination of the different actors at schools. The consultation focus on a support for the whole vocational decision, agreement of binding steps for the implementation of the decision and that the young people have clear imaginations of their realization chances and necessary activities.

(Source: Handbuch zur vertrieften Berufsorientierung, S.8, https://www3.arbeitsagentur.de/web/wcm/idc/groups/public/documents/webdatei/mdaw/mdk5/~edisp/l6019022dstbai391207.pdf)

→ The FEA is also responsible for the implementation of the VO in the industrial-technical field. (see A3)
→ In particular, the FEA is working closely together with the schools to implement VO measures. However, the FEA also cooperates with the Chamber of Industry and Commerce as well as professional associations and qualification providers and / or providers of free youth work insofar they plan and carry out these VO measures.

Chamber of Commerce and Industry:

The Chamber of Commerce and Industry has three tasks: 1. It supports the interests of the economy and its member companies in politics and participates in political decision-making processes. 2. It is a service provider for companies and offers courses / seminars, consultation on business start-ups / law / tax and in crisis situations. 3. It assumes legal duties e.g. with regard to training (such as training organization, picking up exams, keeping lists, recognition of foreign qualifications) In particular, it is responsible for all industrial-technical trainings /apprenticeships as a board and examining body.

→ The Chamber of Commerce and Industry is responsible for the implementation of various VO measures or cooperates closely with the FEA and other actors of the VO. It participates e.g. at training fairs, information events in general and at schools, organizes exchanges with trainees and professional experts in the industrial-technical area.
→ It conducts consultations and, depending on the chamber and the chamber district, offers different information portals on training occupations such as: an apprenticeship stock market (https://www.ihk-lehrstellenboerse.de/skillgroups/entry.html).

Professional associations:

It is a free association of members of the same profession or related professions, who works like a club and has a solid organizational structure. A professional association bundles the economic and social interests of its members.

→ Professional associations are more involved in vocational orientation against the background of the representation of interests of its members. In the context of different VO measures they advertise in particular the appropriate training and partly they also organize company visits or workshops to get to know the professions.
→ The professional associations cooperate closely with all above mentioned institutions and actors of the VO, depending on the different Vo measure.
→ In many cases, the professional associations operate databases on their websites that provide information about different professions.

Professional associations for industrial-technical occupations – examples for Germany:

- Berufsverband IG Metall (metal association)
- Bundeverband IT-Mittelstand e.V. (IT association)
- Fachverband Elektro- und Informationstechnische handwerke (association for electro and information technology crafts)
- VDI und VDE (association for enginees)

Professional associations for women in MINT sciences in various federal states of Germany

APS American Physical Society : Committee on the Status of Women in Physics

Canadian Coalition of Women in Engineering, Science, Trades and Technology CCWESTT

National Association of Women Pharmacist (NAWP)

NKC National Contact Center - Women in Science

NRC: Comittee on Women in Science, Engineering, and Medicine (CWSEM)

Royal Society of Chemistry : Women Members Network

Society for Canadian Women in Science and Technology

Women in Science Enquiry Network Inc. (WISENet

Working questions for the teaching unit

- Which actors of the VO are active in the region?
- What functions and tasks do the actors of the VO take over?
- How does the cooperation take place and what should it look like?
- Who can I contact first if I want to carry out VO in the commercial-technical field?
- What kind of VO measures are being carried out by VO's actors in the region?
- How to better network the actors of the VO***?***

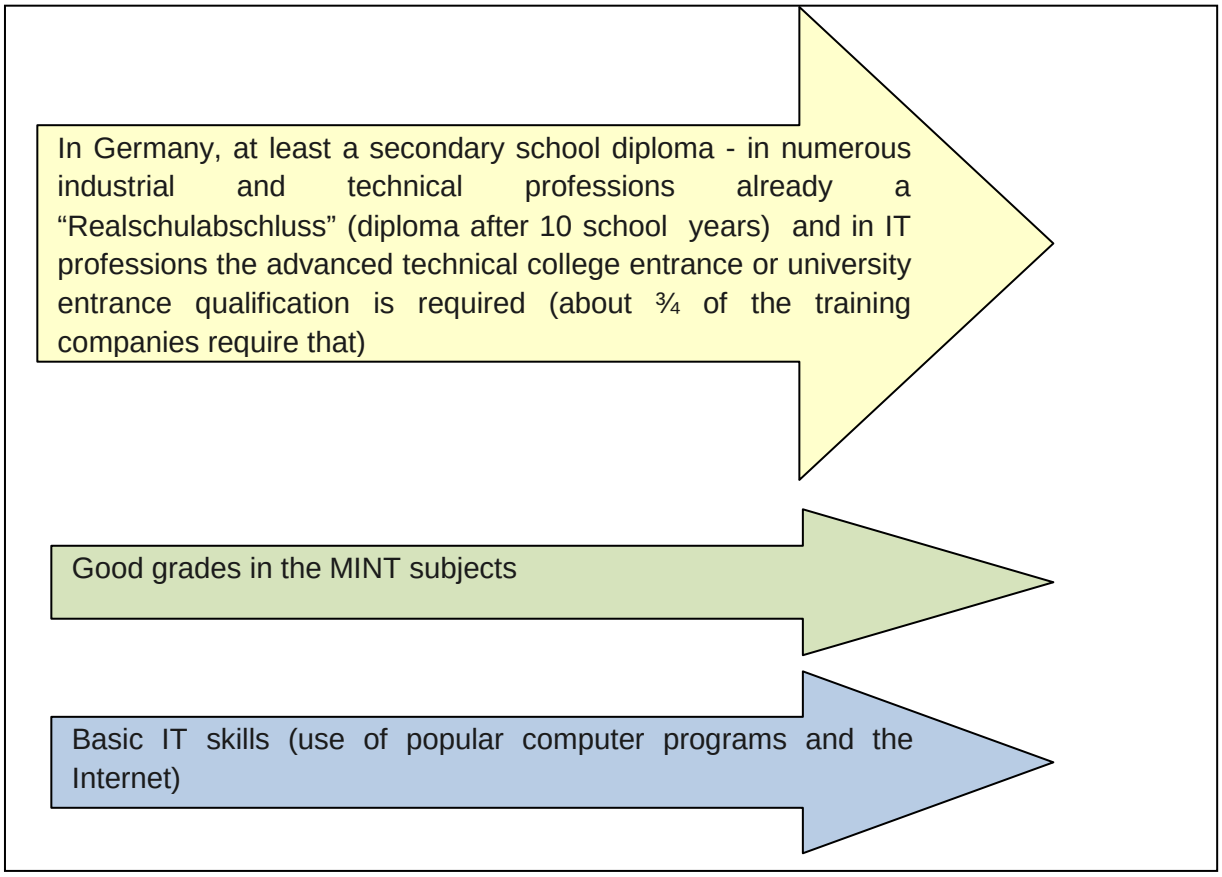
B3 – Training market in the industrial-technical sector

Note: The teaching materials are to be created individually depending on the region. The following aspects can be taken into account or worked out by the respective teacher or group of learners.

- Regional and national training opportunities
  Where can training take place and in which profession? (companies, schools)
- Specifics of the region
  Are there specific industries or production companies in the region that offer training in the industrial-technical field?
  Are there career advancement opportunities in the region?
  Are there vocational schools for the training professions in the region or are they centrally located somewhere else?
- Possible training professions and vocationalqualification opportunities
  What training / apprenticeship professions exist in the industrial-technical field in the region and beyond?
  How are the training programs structured and what further training opportunities exist?
  Which prerequisites are needed for the corresponding training?
- Need of training
  Is there a shortage of skilled workers in the industrial-technical field?
  For which training professions exist free training places?

B4 – Requirements of companies in the industrial-technical field

Formal requirements in the industrial-technical field



See also examplary source: http://www.perspektive-berufsabschluss.de/downloads/Downloads_Projekte_Uebergangsmanagement/Uebergangsmanagement_Fuerth_Auswertung-betrieblicher-Anforderungsprofile.pdf

Non-formal requirements in the industrial-technical field

They depend in part individually on the respective training profession or the peculiarities of the training company. The following requirements are made by most training companies to potential trainees:

- → Safe appearance and good manners
- → Communication skills
- → Ability to work independently and carefully
- → Teamwork
- → Reliability and punctuality
- → Commitment and willingness to learn
- → Physical capacity
- → Endurance
- → Flexibility

In addition, special skills and abilities depending on the profession are desired, i.a.

→ Technical understanding
→ Spatial imagination
→ Mathmatical understanding
→ Drawing skills
→ Craftsman skills
→ Good eye-hand coordinatiom
→ Sens of order
→ Logical thinking
→ Dexterity
→ Retentiveness

Task: Develop the basic frame conditions that a training company has to offer for an apprenticeship / training in the industrial-technical field ! Which requirements are to be placed on the training company.

B5 – Information and data sources in the industrial-technical field

Note: The following questions are to be worked out with those to be qualified by using an Internet-enabled PC. To guide you through the questions, a few facts are presented below, which are to be regarded as working instructions.

- What sources are there?

  3 Examples for Geramny:
  1. Berufenet
     https://berufenet.arbeitsagentur.de/berufenet/faces/index;BERUFENETJSESSIONID=TWQEmj1AsfgzMK746XO_WFvichS4cG8dlSVBn_jt5xDEbxVLcFu6!1876985192?path=null/berufsfelder
  2. IHK – Ausbildung
     https://www.ihk.de/ausbildung
     https://www.ihk-lehrstellenboerse.de/
  3. Planet-Beruf
     http://planet-beruf.de/schuelerinnen/mein-beruf/berufe-von-a-z/

- Where can you firn the sources?
  → Internet
  → Special literature
  → VO networks (in the region)
  → Chamber of Commerce and Industry
  → Professional associations or business associations
  → FEA (Consultats, vocational orientation centre)

- How to work with sources?
  The handling of the different sources should be done directly by exercises on the PC.
  Possible tasks:
  → Where can you find information about the apprenticeship profession »Mechatronics for cars, industrial technician and electronics technician for Industrial Engineering" ?
  → Which information would you like to receive?
  → In what form do you want to receive information (e.g. short text, documentation, video, audio)?

- Benefit and possibilities of information?
  → Can I use the information for my vO activities?
  → How can I use the information?
  → How can I prepare the information? (for example as information folder, graphically)

C0 – Social competences in the consultation and support of vocational orientation processes (C1 – C5)

C1 – C5 – Communication skills, ability to organize, analytical skills, methodological skills, problem and conflict solving skills

Communication skills: Note: See slide set C1_Communication skills

Ability to organize: Note: Seeslide set C2_Ability to organzize

Analytical skills: Note: See silde set C3_analytical skills

Methodological skills: Anmerkung: See slide set C4_Methodological skills

Problem and conflict solving skills: Note: See slide set C5_Problem/conflict solving

D0 – Preparative measures in the vocational orientation (D1 – D5)

D1 – Data collection of the clients

Aspects and criteria of data collection:
→ Status Quo (What data should be collected?)
→ Strengths / weaknesses (by which method can be strengths and weaknesses identified?)
→ Inclinations (How can inclinations be determined?)
→ Interests (Which interests have relevance in the VO of an individual?)
→ Data collection methods (Which methods are most suitable and effective? How to document data?)

Discussion question: What data must be collected in order to plan and carry out a targeted VO for a person with a focus on the industrial-technical field? How can the data collected be used and how can it be protected?

D2 – Assessment tests and profilings

Different target groups:
→ Pupils with a low level of education or younger pupils (e.g. secondary school pupils, students in grade 7 + 8)
→ Pupils with a medium level of education or older pupils (e.g. secondary school students, students in grades 9 to ....)
→ Pupils with a higher level of education or older students (e.g. high school graduates, students in grades 12 + 13)
→ Young adults with low or high educational qualifications

Possible assessment tests or profilings should be selected and conducted according to the level of the respective target group.

Question: What are the prerequisites the different target groups to be consulted bring to the testing and what type of assessment test or profiling can and should be used there with a view to the VO?

What are assessment tests or profiling in the VO and what do they generally use for?

Assessment tests are to be understood in terms of the VO as a test to determine professional qualifications, strengths and weaknesses, skills / competencies. There are a variety of different test procedures on the Internet (this should be developed in the learning unit) or in literature form. They provide information about the abilities and inclinations or suitability, so that it can be weighed accordingly with a focus on the vocational requirements in the industrial-technical field, which professions may be considered.
Vocational profilings are a kind of analysis of the requirements of a vacant position (job profile) in connection with the analysis of the most important traits of the prospective trainee (candidate profile). The candidate profiling identifies what a potential trainee can do, what he wants to do and what he enjoys, as a result to determine which profession fits this. It can assist the potential apprentice in his professional decision. Example of an online profiling in Germany: http://was-will-ich-was-kann-ich.de/

Work task: Evaluate an assessment test procedure or profiling method of your choice against the background of the use for the individual VO and discuss in the group the benefits for the young person in the career choice process or the advisor / supporter in the VO!

Questionnaire development

Before the questionnaire development it must be clear that the respondents
- → understand the questions
- → get the answers to the questions relatively quickly and have the necessary information ready
- → can assess the requested information in order to respond accordingly
- → can fit their answers in a response format

How to develop the questionnaire
- → Formulate questions simply and concisely
- → If questions are answered with yes / no, the question may only allow these answers
- → Do not use technical terms that the respondent does not understand
- → Do not use ambiguous terms
- → Do not use terms that interpret or understand respondents differently
- → Create questions systematically (they should follow a certain logic)
- → Consideration of the different requirements of the respective target group

Work tasks - taking into account specific target groups (for example, low and high school students):

1. Create a questionnaire to identify a person's strengths and weaknesses
2. Create a questionnaire to identify the interests, inclinations and abilities of a person

Then present the results that have been worked out in the group.

Interviews

Each counseling session is a kind of interview, because not only information are transmitted to the the person to be counseled, but also questions are asked about different things. In order to obtain the required information in an interview, first of all the target group has to be considered and in particular their requirements. Furthermore, the interview has to be

1. prepared
2. carried out

Note: See slide set D2_Interview

D3 – Labour and training market analysis in the industrial-technical sector

The labour market and training market analysis is an analysis of the labour / training offers and the labour / training demand. This can be done regionally as well as nationally, what ultimately leading to more results.

Criteria (Questions on) the analysis with regard to the industrial-technical field

- Work / training opportunities (which companies offer work and training)
- Professions / training professions (which professions / training professions exist in the industrial-technical field? Where is there a shortage, where an overspill)?
- How large is the proportion of women in the industrial-technical sector?
- What requirements do applicants have to bring according to the company?
- In the future, where are changes be expected on the labour / training market in the industrial-technical field?
- In terms of training: where does the vocational school lesson take place or supplementary courses?
- How is the first and the second (state-subsidized) labour market designed?
- Which forms of training exist (part-time, combined and assisted training)
- Which training courses are suitable for which school leaving certificate?
- Etc.

Work task:
Develop relevant criteria of a labour / training market analysis for your region!

Discussion:
How to proceed methodically to analyze the labou market / training market in the industial-technical sector?

Analysis methods and their implementation as well as the evaluation of data

The methodical process is done by using different sources of information, such as literature, Internet, statistics, interviews with relevant actors in the industrial-technical field (e.g. Chamber of Commerce and Industry, professional / employer associations, vocational schools)

- First, an analysis structure should be defined - What do I want to identify in which order, what information do I want to identify
- Viewing statistics and literature or Internet (Which information can I get here)
- Considerations where missing information can be acquired (Which institution or who can provide me the information)

D4 – Development of vocational career plans and life plans

Career plans

A meaningful and well-paid job that has a positive impact on life and allows for a balance between family and work - that is the central theme that should and will be considered in every career plan. Career plans are particularly important at the beginning of a career because they help to find the right path and to go it long term. The disadvantage is that you focus too much on the created plan and you do not notice opportunities next to the plan. The career plan should only serve as a guide and should allow a degree of flexibility.

Examples for career planning in Germany: https://karrierebibel.de/karriereplan-erstellen/

Life plans

In principle they are similar to the career plans - but they include also private aspects in addition to the professional planning. If these are taken into account when creating corresponding plans, then this can possibly be advantageous so that it quickly becomes clear whether or not the planned career path is to be reconciled with the private goals and plans. Often, career plans fail because they are created independently of the private life planning. At the beginning of the professional career the professional turnaround can be made in such a way that also possible living conditions are taken into account, if the planning is to be sustainable.

Target agreements

These can be completed by the respective persons in the VO (such as students) with institutions and persons who provide advice and support in the VO. In particular, they are useful in determining which VO measures and activities a person can complete and what tasks they should fulfill in order to make a career choice. Corresponding target agreements should not be used as a means of coercion, but should only point out possibilities that can still be undertaken in the VO. However, in a longer-term advisory or supporting process, it serves to check what has already been done in the VO and what is still possible or open to action. In order to check which activities have been undertaken in the VO, the “assessment instrument for done VO measures and activities” that has been developed in the BOQua project may possibly be used (see www.bouqa.eu ; downloads).

Task: Develop relevant aspects and contents of career and life plans and bring them into an orderly structure. Consider possible influencing factors of life and present them as well.

D5 – Establishment and maintenance of relevant networks in the industrial-technical sector

VO networks

Networks in general represent an association of different institutions or actors that pursue the same aim and, if necessary, complement each other to achieve the aim. Each network partner contributes its know-how and, if necessary, also contributes to the further expansion of the network through contacts with other actors.

Purpose and tasks of Vo networks:
→ Common aim achievement
→ Easier communication channels
→ Exchange of data and information

→ Organization of VO measures and activities
→ Distribution of tasks in the VO
→ Joint contact for the young people in the VO

Task: Which actors and networks in the industrial-technical field exist who are active in the VO and what are their aims and tasks in the region? Develop the question in the team and present your results!

Network structures and creation / maintenance of a network

Team task – Team 1: Develop a network structure with all actors responsible for the industrial-technical field and who are or want to be active in the VO as well as a first network meeting.

Team task – Team 2: Develop the necessary work steps for building up a VO network and its maintenance with a focus on the industrial-technical field. Explain also the selection of the network partners!

D6 – Supporting young people to actors of vocational orientation in the industrial-technical sector

Group discussion on the subject "accompanying to actors of VO" – **Initial question:** What experiences did you have made in accompanying young people to consultations of the Federal Employment Agency, chambers, other advisory institutions, what went good and what went wrong?

What should be considered in the accompaniment / support:

1. Obtaining information about the consultation institution (who is responsible, what are the objectives of the institution, is the institution specialized in the industrial-technical field?)
2. Fix and note the appointment with the institution (confirm if necessary)
3. If necessary, clarify in advance what the topic of the consultation is and inform the institution about the status quo of the person to be advised.
4. Clarify if and which documents to be bring to the appointment
5. Explain the person to be advised about the aim of the consultation appointment and work out with him questions that can be asked in the course of the consultation.

E0 – Cross-vocational vocational orientation measures (E1 – E4)

E1 – Good-Practice Examples, which are suitable for the orientation in the industrial-technical sector

Note: The examples of good practice outlined below can be taken out of the Good Practice Guideline for implementing VO measures in detail that was developed in the BOQua project. The guideline is available at **www.boqua.eu** – downloads.

Contents, structure and framework, aims of different VO measures:

1. Planning games with a focus on the industrial-technical sector
2. Camps for vocational orientation (for certain professions)
3. Theatre educational activities
4. Integration of practitioners (economy)

5. Vocational fairs (exclusively industrial-technical professions)
6. Integrated activities in the vocational orientation office
7. Pupil companies
8. Vocational-oriented lessons (integration of industrial-technical content in teaching contents)
9. Seminars/workshops on various industrial-technical professions

E2 – Organization and implementation of VO measures in the industrial-technical sector

Selection criteria for VO measures that are suitable for VO in the industrial-technical field

→ Type of measure

→ Scope of measure

→ Content of measure

→ Effort to carry out the measure

→ Aim of the measure

Contacting relevant actors:

In order to carry out a VO measure in the industrial-technical field it must first be determined which type of measure is planned and which objective is linked to it. As a result, the first consideration is: which partners can support you in planning and implementation?

With VO focus on the industrial-technical field, it should be actors who are active in the industrial-technical field and who know the career paths and possibilities as well as the challenges that the field poses to the employees / trainees. In addition, partners should be identified who have an interest in VO in the industrial-technical sector.

Possible partner:

Business associations

Training companies

Vocational schools

Chamber of Commerce and Industry

Unions

Professional associations

Regional institutions of free youth work

Employment Agency

General work steps

Before the partners are addressed, at first the rough course of measure should be thought out and documented in order to help potential partners to decide to participate in the VO measure. Insofar as the VO measure requires partners and these are found, the process should be improved with them to include their ideas and wishes in the final planning. The following work steps and tasks have to be done:

1. Determine at which institution the measure can be implemented
2. Determine which additional institutions need to be involved (e.g. if the measure requires workshops - who can provide them)
3. How extensive the measure should be (content and time)
4. When should the measure take place?
5. Which information materials are needed and have to be created?
6. What the rough schedule should look like

Task: It is planned a company visit in an industrial company, which offers numerous different industrial-technical training / apprenticeships with a subsequent work sample of the participants as well as group discussions with trainers and trainees.

Plan the course of the action in the group and determine which actors are additionally useful as participants and how they can be integrated. Then discuss your result!

E3 – Accompanying /supporting of VO measures

Preparatory measures (what must the participants of the VO know):

→ Kind of themeasure
→ Aim of the measure
→ Where the measure takes place
→ When the measure takes place
→ The course of the measure
→ Tasks to bedone in the course of the measure
→ Form of documentation of the results that are achived during the measure
→ Maybe documents what the participants need to bring to the measure

Documents and accompanying measures

The form of the documents and accompanying measures must be determined in advance of the measure and depending on it. Useful and to ensure a good flow of a VO measure are e.g. schedules and timetables that provide information on what, when and how to happen in the course of the VO measure. This takes place against the background that the participants of the measure are prepared to different actions and that they know what information they should collect in the course of the VO measures in order to orientate themselves professionally and to derive the greatest possible benefit for themselves personally.

The accompanying/ supporting measures for the implementation of VO measures include, in particular, the preparation and accompaniment of the VO measure with the participants. In the course of this:

1. Above mentioned Information need to be passed on to the participants in advance.
2. Clarified how to come to the place of implementation.
3. The role of the accompanying / supporting person must be determined
4. The participants must be informed about the objectives and possible follow-up.
5. The participants have to be accompanied to the VO measure and the contact person (companion) may have to react to changes and be able to react flexibly.
6. A form of documentation of the outcomes needs to be fixed and it have to be explained to the participants so that they know what to expect and what they need to be aware during the VO measure.
7. Based on the results, further actions should be planned for the group or individual.

Integration into the oprganization

It is important to think about how a VO measure can be involved in the institution that visits them (or performed it). Here it is important to consider what the actual task of the institution is and how it generally and in what context it works with young people every day.

Example »school«:
If the accompanying / supporting institution is a general education school and in person teachers, then the VO measure should be created in such a way that it fits into the framework curriculum. Lesson times should be planned to prepare and follow-up with the students the visit of the VO measure. Furthermore, the planned VO measure should be part of an overall VO concept and be brought into a logical direction of further planned VO measures.

Recommendation: See notes on preparation and follow-up - Day of the vocational and study orientation the Pedagogical State Institute Rhineland-Palatinate in Germany https://berufsorientierung.bildung-rp.de/fileadmin/user_upload/berufsorientierung.bildung-rp.de/TagBSO/Hinweise_zur_Vor-_und_Nachbereitung.pdf

Task: Discuss in the group the above mentioned aspects in terms of their feasibility and benefits.

E4- Post-processing of VO measures

Aims of the post-processing

1. Evaluation of the input gained during the VO measure
2. Focusing on the results of the VO measure and the individual benefit (individual reflection)

Kind of post-processing

→ Individual presentations (reviews)
→ Structured evaluation discussion in the group moderated by the teacher
→ Discussion group (chair circle) in which questions like "What has the VO measure brought me? What was my most important insight? What is my next step in the career choice process? " are discussed
→ Written documentation (for example in a career choice pass)

Task: 3 groups

1. How would you like to follow-up a visit to a job information center with the participants?
2. How would you like to follow-up the visit of a vocational training fair with the participants?
3. How would you like to follow-up a company visit including exchanges with trainers and apprentices with the participants?

Subsequently, presentation of the results

F0 – Vocationally related vocational orientation measures (F1 – F5)

F1 – Measures to update the own level of knowledge in the industrial-technical field

The updating of the own knowledge of the advisory and accompanying /supporting experts of the VO has great importance against the background of the constant changes in work techniques, materials, increasing digitization, prerequisites and challenges in the industrial-technical professions.

So following question arises: As an expert, how can I regularly update my level of knowledge in order to be able to advise and support young people who want to be vocationally oriented in the industrial-technical field professionally and up-to-date?

This is done primarily on the basis of self-commitment and by using different sources:

1. Literature
2. Internet e.g. for Germany (for other countries use the general platforms where you get information about different professions).

   → https://www.bibb.de/dokumente/pdf/Expertise_Howe_Knutzen.pdf
   → http://www.berufe.tv/
   → https://berufenet.arbeitsagentur.de/berufenet/faces/index;BERUFENETJSESSIONID=Y40jeJe4N2t3zpq13LyfypID5nSOv8UP-Ssgiauuksq13am3oNTo!-783087474?path=null
   → http://www.planet-beruf.de/lehrerinnen/
   → http://www.planet-beruf.de

3. Discussions with respective specialists of chambers
4. Discussions with experts from industrial-technical vocational schools
5. Visits of specialist conferences, trade fairs, congresses
6. Company visits and discussions with experts from various industrial-technical professions (talks with trainers)
7. Visit of special expert seminars (further training)

F2 – Work testing in the industrial-technical vocational sector (professions)

Identification of potential fields, organization of work testing, implementation and support of the work testing

Step 1:

The potential fields for work testing (e.g. in which profession or vocational field) has to be defined on the basis of the strengths and weaknesses of the adolescents as well as on the basis of their professional interests. Additionally it has to be specified what should be specifically tested in the work testing.

Step 2:

The organization of the work testing covers different tasks. First of all, it must be identified on the basis of the determination of the concrete work testing where the work testing can take

place, such as at which institution and whether this institution is able to carry out the work testing. In addition, a specific task has to be set up and the aim of the work testing has to be formulated.

Step 3:

The relevant institutions are to be contacted. In the course of this, they must be informed about the purpose and the task in order to identify whether the selected institution can provide the work experience. It also has to be clarified the time, time scope and the responsibilities and any items to be brought along (e.g. protective clothing).

Step 4:

The young person should be informed about the aim and the course of the work testing before it starts.

Step 5:

Depending on the duration of the work testing, the adolescent is visited at the executing institution of the work testing to determine the progress of the work testing and to check whether the work testing meets the requirements of the objective

Step 6:

After the work testing, it should be documented and evaluated by the participant in a written form. The results should then be presented and discussed in the context of the individual career choice process. It must be individually agreed with the young person to what extent the work testing actually corresponds to his or her strengths as well as abilities and skills as well as professional interests.

Task: Plan a work testing on the example of the profession “automotive mechatronics or another industrial-technical profession” and present the work steps from the idea to implementation.

F3 – Vocationally related internships in industrial-technical sector (professions)Step1:

For the implementation of occupational internships in the commercial-technical field, it is first necessary to identify possible internship places in the region. This can be done by contacting the relevant authorities such as chambers, business associations, company fairs, internships exchanges, Federal Employment Agency and direct consultation with relevant companies.

Step 2:

Get in contact with the company and clarify the following aspects

1. In which profession an internship is possible?
2. The procedure of the internship, especially which stations are to be run through?
3. Which work tasks the internship includes in detail?
4. How long the internship should be and when should it take place?
5. What prerequisites the trainee must have?
6. Whether the trainee should take certain things to the internship (e.g. protective clothing)?
7. Who visit the participant at the internship place?
8. Whether the internship is recognized (e.g. for young adults)?

Step 3:

The intern must be informed about the aspects presented in step 2. Futhermore the aim of the internship have to be explained to him.

Step 4:

As part of the internship, the intern must be accompanied /supported by the VO expert. This is done by one or more visits by the VO expert by the internship company. The VO expert will hold talks with the intern as well as the company (or responsible person) about the progress of the internship. In addition, the intern should write a kind of report containing information on daily tasks and work processes, which he completed and then present the results individuell or in the classroom

Step 5:

Following the internship, a summary report on the internship is to be prepared by the intern and the result individually or in e.g. to be presented in class. The report should provide information about this:

1. Whether the intern likes the profession he got to know
2. Whether the profession corresponds to its strengths and interests
3. Whether the intern was well prepared for the internship
4. Whether there are suggestions for improving future internships

Task: Which aspects should be taken into account when planning and implementing an internship and in what order?

F4 – Company visits and inspections in the industrial-technical sector

Differnt kind of company visits

1. Pure company visits where different departments are visited and workflows can be observed
2. Company visits with a focus on industrial-technical work processes
3. Company visits with a focus on a specific industrial-technical professions
4. Company visits followed by an exchange with trainers and trainees of a specific profession

It is also possible to differentiate between purely observational company visits and company visits with smaller practical units.

Aim of a company visit

The main aim is to get to know professional fields or different professions in the industrial-technical field. In addition, typical work processes and tasks are to be observed in order to derive possible requirements and challenges in the observed professions.. The young people should get an impression of what they have to do in the different professions in a company. They should identify advantages and disadvantages of the different professions in the real world of work.

Step 1:

In order to carry out a company visit, at first the following considerations must be considered:

1. Which occupational fields or professions should be known?
2. Which company comes into question in the region generally for a company visit?
3. Are the companies in question suitable for getting to know specific professions?
4. Whom do I contact in the company?
5. What possibilities are possible in addition to the pure visit in the company (e.g. to try out work steps yourself, to exchange ideas with employees, to talk to trainers and trainees)
6. When and to what extent should the company visit take place?

Step 2:

If a company is found for a visit, the schedule must be prepared and discussed with the company. Afterwards, the young people are to be informed about the aim and the course of the company visit. In addition, initial information about the company and the work processes to be observed can be worked out in advance as well as about the industrial-technical professions and the peculiarities and possible questions with regard to individual professions. It can be also developed a work task for the company visit, so that the participants are guided to observe and to question certain things in the course of the visit and subsequently document it.

Step 3:

The company visit should be accompanied / supported by a VO expert. He is next to the company the contact person for open question. After the company visit, written elaborations will be made with regard to possible tasks in connection with the visit as well as a presentation of the results and a subsequent feedback session or discussion with the young people in the group or in one-to-one interviews.

Task: Work out the necessary steps to carry out a company visit against the background of vocational orientation! Formulate a work task for the participating young people.

F5 – Exchange with experts and trainees

Criteria for the selection of experts and trainees
The selection of experts and trainees should generally be considered against the background of the objective of the exchange, e.g. if a young person is cope to the challenges and demands of a particular training profession according to his strengths and interests. In the case of planned group discussions, experts and apprentices are to be selected who can comment on the professional interests of the group from the perspective of their experiences

Expert selection criteria
- → Professional career
- → Qualifications
- → Professional competences
- → Professional experiences
- → Function in the company (e.g. manager, foreman, trainee)
- → Relation to the regional labour and training market

Trainee selection criteria
Trainees should be selected who are in their last year of training, because they can report about the whole training as well as about their gained experiences and they are able to answer questions from their point of view about the training.

Organization and implementation of the exchange (network meeting)

Step 1:

The exchanges with experts and trainees can take place on the one hand on the place of the VO performing institution (e.g. school, free youth work organization) or on the other hand in the companies to which the experts and the trainees belong. The Chamber of Industry and Commerce is also suitable for the implementation for an exchange on industrial-technical professions, because they have additional experts which can give advice and which are able to reflect a general view of individual professions or a vocational school can be a place for an exchange. Also, the exchange can be done within other VO measures, e.g. during a company visit, as part of a vocational training fair, etc.

Step 2:

It is important to consider whether the exchange should take place in the form of a one-to-one interview or in a group. Furthermore, the time and time scope has to be determined

Step 3:

The experts and trainees must be informed about the time, time scope, location and procedure as well as about the objectives, so that they can prepare themselves for the exchange. The same applies to the participating young people. In addition, key questions should be worked out with these.

Step 4:

After the exchange, a feedback session or a feedback discussion should take place, on the one hand to clarify open questions and, on the other hand, to clarify whether the corresponding profession (which was the subject of the exchange) meets the expectations of the young person.

Task: What criteria would you use to select experts and trainees for an exchange? Which relevant questions could be asked to them?

G0 – Complementary VO activities (G1 – G5)

G1 – Application process in the industrial-technical sector

Consultation aspects:

- → Which manual and technical skills and abilities have the person to be advised?
- → What are his interests in the industrial-technical field?
- → What are the technical inclinations of the person to be advised?
- → Has the person to be advised practical experience in the industrial-technical field, e.g. through summer jobs, practical tests, internships?
- → What is the long-term professional objective of the person to be advised (e.g. subsequent technical studies, training as a technician)?

→ Which companies in the industrial-technical field offer appropriate training in the region?
→ What requirements are placed by potential industrial companies in the region on the applicant for a training position?
→ What challenges exist?

Creation of application documents:

Cover letter:

The cover letter of the application should be informative and concise and should awaken the interest of the training company or training institution. It should not contain more than one DIN A4 page, be free from grammatical and spelling mistakes and should not be a repetition of the curriculum vitae. You should use a readable font size (font size 11 or 12) and a common font (for example Arial, Verdana). Multi-line, difficult-to-understand nesting sets should be avoided. It is necessary to abstain from excessive introductions and cumbersome wording in the cover letter of the application, because the companies have due to numerous applications only little time for the review of the documents.

The cover letter of the application should be read again by another person before sending.

In terms of content, the cover letter of the application should contain the essentials and make the company curious about the applicant. The requirement profile of the job advertisement should be considered. Get some knowledge of the company in advance and refer to their specifics. Furthermore, a statement why the decision for "this" training occupation has been made can be beneficial. It is also possible to describe where one 's own strengths, abilities and skills lie (it should be taken care, in particular, to present those who are responsible for a training in the industrial-technical field) It is also possible to explain why the decision was made for a particular industrial-technical training occupation.

Structure of the cover letter:

- Sender address (with telephone, mobile number and e-mail address)
- Recipient address (with contact person)
- Date
- Subject (application for an apprenticeship position, your advertisment....in..from)
- Salutation
- Entry / introductory sentence
- Relationship to the new company
- Short description of the applicant profile
- Note about the strengths, abilities and skills (with an example where they have been acquired)
- Other knowledge (languages, computer programs, etc.)
- Short conclusion formulation
- Signature
- Annex

Curriculum vitae: German example

Max Maximal
Musterweg 1 - 12345 Musterfeld
Tel.: 001-112233 / Mobil 0177-1112223
E-Mail: max.maximal@web.de

Lebenslauf

Bewerbungsphoto

55x40mm

Persönliche Daten

Geburtsdatum:	25. Juni 1993
Geburtsort:	München
Staatsangehörigkeit:	deutsch

Ausbildung

08/2002 - 06/2011	Mustermann Gymnasium in Musterfeld Hauptfächer: Erdkunde und Englisch Abschluss: Abitur (Note 2,2)
07/2010 - 08/2010	vierwöchige Sprachreise nach London, England
09/2009 - 10/2009	vierwöchiger Schüleraustausch in White Bear Lake nahe Minneapolis, U.S.A.
08/1999 - 07/2002	Maxima Grundschule in Musterfeld

Erste Berufserfahrung und Praktika

02/2009 - 12/2010	Aushilfskraft im Café „Lecker“ in Musterfeld
03/2009	zweiwöchiges Schulpraktikum im Bereich Sales bei der Muster AG in Musterfeld

Sprach- und EDV-Kenntnisse

Sprachkenntnisse:	Englisch (sehr gute Kenntnisse in Wort und Schrift) Französisch (Grundkenntnisse)
EDV-Kenntnisse:	Word/ Outlook (sehr gute Kenntnisse) Excel/ Powerpoint (Grundkenntnisse)

Freizeitinteressen

Lesen, Tennis, Badminton

Ort, Datum

Unterschrift

Source: https://www.stellenanzeigen.de/media/web/muster/lebenslauf/auszubildender.pdf

Preparation of job interviews

- Obtain information about the training company / institution
- Obtain information (if possible) from the person you are talking to
- Know your own application well, know what you wrote to respond to inquiries
- Self-presentation (maybe play the interview with friends or family members through - that takes away the nervousness)
- Make notes
- Make an appropriate outfit for the interview

The applicant should be confident and friendly. Questions can be asked about the chosen profession, so the candidates should prepare arguments in advance. Also, questions from the applicant are allowed. These should underline the applicant's interest in the training / apprenticeship, the profession and the training company / institution. The following questions can be asked:

1. Tell me something about yourself.
2. Why did you apply with us?
3. For what reason do you want to learn this profession?
4. What do you know about our company?
5. What do you plan professionally after the training?
6. Why do you think you are the right apprentice for the company?
7. What are your personal strengths and weaknesses?
8. What bothers you most about other people and how do you deal with it?
9. Have you already gained experience in the industrial-technical field and how and where?
10. What do you do in your free time?

Operational aptitute tests (in training companies/institutions)

It can be expected that the company will carry out an aptitude test with the potential trainees. This can be of a purely theoretical nature, but also contain practical tasks. It is expected that the test will be used to test the skills, knowledge and abilities required to work in the industrial-technical field. But also social skills such as concentration, technical understanding, teamwork, organizational skills, problem-solving skills, spatial and mathematical thinking are aspects that are tested.

Corresponding tests are only intended to complete the picture that the company received through the application. There is no reason to get nervous because the tests do not necessarily expect a full score. The company only wants to reinforce its impression that it gained in the course of the application and a job interview.

G2 – Methods of self-reflection

Question for discussion: Was bedeutet Selbsteinschätzung und wofür dient sie?

Methods for self-reflection for clients

→ Assessment tests
→ Inclination tests
→ Aptitude tests
→ Strengths / weaknesses tests
→ Role play
→ Group discussions

Use and evaluation of self-reflection

The self-reflection should always be done in the course of the career choice process. It is recommended that a self-reflection should be made relative to the beginning of the vocational orientation process, with the aim of recognizing one's own strengths and abilities or skills, and aligning them with the vocational orientation process and career choice process. The evaluation is carried out depending on the chosen method of self-reflection by the adolescent in cooperation with the counselor or supporter of his vocational orientation process or career choice process. Not only the strengths and abilities or skills should be worked out, but also the inclinations and professional interests should be compared with them in order to steer the career choice process in a meaningful professional direction and to make clear to the young person which profession correspond to his profile.

G3 – Information events

Kind of events (parents, pupils, students, companies etc.)

1. **Public information event**
   This form of the event usually requires an official registration with the authorities and is legally bound by numerous conditions. This means that suitable premises / locations are to be provided in accordance with the scope of the event, safety requirements must be taken into account, etc. (concrete details must be obtained from the competent authorities at the venue, for the first contact the regulatory authority)
2. **Private event**
   This form of event is limited in terms of conditions. Thus the youth protection law, copyrights, special levies, civil and criminal law etc. are to be considered
3. **Free event**
   This form of event includes **educational and informational events**. They are limited and dependent on the scope of the event of certain conditions.
4. **Event-like events**
   This form includes e.g. educational and professional fairs, open days etc

Benefit

The benefit of an information event on vocational orientation should always be in it.

Implementation

Task: In short, work out the necessary work steps for the implementation of an information event on vocational orientation with a focus on »industrial-technical professions« for parents and pupils!

Selection of information

The choice of information for an information event that serves vocational orientation depends on the target group that is to be addressed as well as the objective of the event. In general, however, information material should always be provided for take-off at information events. In particular, if the information event includes lectures, information should be kept available for them so that the information will survive after the event. Also, informative events on vocational orientation can offer an information list with information sources, so that visitors of the event can further inform themselves after the event and can deepen their knowledge that they acquire at the event.

G4 – Consultation of relatives

Target group and their special features

The consultation of relatives in the course of vocational orientation is secondary to the adolescent's counseling. First and foremost, the advice is directed to the legal guardians of the adolescents (parents). The consultation should take place against the background that they support the career choice process of a young person. Attention! Parents tend to impose their wishes and interests on the adolescent, with the result that the adolescents sometimes start a training that does not reflect their true interests and inclinations, and in particular their strengths and abilities / skills. In general, the following consulting aspects should be considered and addressed in the consultation:

Consultation content and structure

1. How can relatives (parents) support the adolescents in choosing their career?
2. Which sources of information can and should be used?
3. What career opportunities are available to the young person in the context of his school education in the region?
4. Are there alternatives beside a training after finishing school?
5. What interests does the adolescent have and how did he develop them?
6. Which strengths and abilities / skills does the adolescent have and which professions are suitable for him?
7. What suitable training opportunities (e.g. training company) exist in the region?
8. What requirements does the young person have to face in different professions?
9. What advantages and disadvantages do different training professions offer?

Task: Which problems can arise through the counseling and guidance in the vocational orientation by relatives? How can a professional consultant specifically counteract this?

G5 – Visit to the vocational information centre

For lesson preparation the following source can be used in Germany:

https://www.arbeitsagentur.de/bildung/berufsinformationszentrum-biz

Other countries have to search if there exist something like this kind of center in their country. If not replace the teaching unit by another country-specific VO measure.

Task: Plan a visit to a career information center in the team or the group and present your work steps!

Freie Lizenz