2 In-Service-Training:
Pedagogical Basics on Technical and Vocational Education and Training
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Content IST 1

Content IST 2

M7: Apply Methodical systems for shop floor work 3
M8: Action oriented teaching with learning and work assignments 40
M9: Apply methodological systems for shop floor work 65
M10: Evaluation and self-evaluation of performance 87
M11: Improve teaching skills - Video supported microteaching 109
M12: Improving teacher teamwork for better quality of TVET 133
Module 7:  
Apply Methodical systems for shop floor work

The eight units display the great variety of teaching actions referring to the methodical competence of the trainer or instructor. You will see the variety in teaching and you will realise the advantages of each method after a short while. Remember, a good trainer has a high level in methodical competence, what means - he/she knows for the right situation the right method!

<table>
<thead>
<tr>
<th>Nº</th>
<th>Name of Unit</th>
<th>Tests</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit 1</td>
<td>Plan courses on shop floor level</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 2</td>
<td>Arrange the physical learning environment, design workshop</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 3</td>
<td>Organise workshop safety and install a cleaning and maintenance system</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit 4</td>
<td>Introduce students in the working environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit 5</td>
<td>Select practical learn and work tasks and organise a file system on exercises and related documents</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 6</td>
<td>Apply the 4-step method</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 7</td>
<td>Apply the &quot;Leittext&quot;-method</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 8</td>
<td>Apply the project method</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Specific objectives of module
Upon completion of the module, you should be able to apply different methods in your own teaching and instruction for shop floor work. Especially you can

✓ Plan courses on shop floor level
✓ Arrange the physical learning environment and organise workshop safety
✓ Select practical learn and work tasks
✓ Explain different methods for shop floor work
✓ Apply the 4-step method
✓ Apply the "Leittext"-method
✓ Apply the project method corresponding with different performance levels of students
✓ Apply the guidelines and hints of the module for fostering self-reliant form of learning when you are planning and conducting own teaching
Module 7/ IST

**Purpose of module**

Developing individual competences to prepare and conduct courses on shop floor level

- ✔ Learning the principles, advantages, disadvantages of common methods of student/trainee centred learning
- ✔ Working out examples of written preparation applying different methods

**Graphical structure of the module**

**Apply methodical systems for shop floor work**

- Plan courses on shop floor level
- Arrange the physical learning environment, design workshop
- Organise workshop safety and install a cleaning and maintenance system
- Introduce students in the working environment
- Select practical learn and work tasks and organise a file system on exercises and related documents
- UNIT 1-8
- Apply the project method
- Apply the “Leittext” method
- Apply the 4-step method

**General information on the characteristics for shop floor work**

Generally spoken self-reliant learning has the following distinguishing marks:

1. The process of learning follows the steps of the complete action model
2. Methods of learning for shop floor level requires and provides that teachers appropriate a different role of teaching
3. To define, to carry out and to assess an assignments for learning on the shop floor level is a comprehensive process that contains all steps of the complete action model
General information on conducting lessons (1/3)

Note: Remember the details given in module 2

The general sequence in conducting a lesson is as following:

1. Warming up and motivation
2. Information
3. Knowledge transfer
4. Tasks to settle comprehension
5. Analyses, syntheses
6. Evaluation measures

General information on conducting lessons (2/3)

The first step in course development is the design process. In the design process, we identify all the important things that must go into the course. The result at the end of the design process is a curriculum document or syllabus. The curriculum document is a blueprint of your training course. These will be discussed in greater details in a subsequent section.

Before we proceed with the details of the design process, we need to understand the factors that influence the design of training. The figure presents the major factors that must be considered in designing training. The diagram highlights that training design is multifaceted and requires the course developer to understand the entire training process and system.
General information on conducting lessons (3/3)
As an aid to the review process, you may wish to ask the following questions:

✓ What is the nature of the proposed course (managerial, technical, supervisory, clerical, outdoor or indoor)?

✓ What are the specific characteristics of the target audience (e.g. educational level, age, motivation, attitude, and experience)?

✓ How would the target audience affect the use of training methods and techniques (e.g. type of learning activities, delivery technique, choice of venue, assessment and styles of training)?

✓ What are the training gaps that must be addressed by the training?

✓ What is the best venue for this type of training course (e.g. hotel, within the chamber, at the work place or outdoors)?
Unit 1: Plan courses on shop floor level

The necessity of detailed planning

The necessity of detailed planning of training is obviously considering the fact that the defined objectives of training have to be achieved completely in a given time. Therefore it is necessary to manage the training process carefully and sufficient planning documents will be applied which give any participating person guidance for planning and organisation.

The availability of such planning documents enables transparency of the entire training process and indicates, whether the training process is objective-directed and efficient or not.

The tasks of the trainer are to

- Apply different training plans according to specific needs
- Define training time to be indicated
✔ Define objectives and contents to be imparted
✔ Define working steps and related tools & equipment
✔ Plan time and location for any type of instruction
✔ Plan trainees rotation between work stations
✔ Introduce superiors to the training plan

**The Design Process**

We recommend the following optimum set of planning documents in line with steps of planning.

<table>
<thead>
<tr>
<th>Steps of planning</th>
<th>Purpose</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives</td>
<td>... training has to be directed towards objectives those have to be defined</td>
<td>Legal basis (vocational training, act, training contract, aptitude test)</td>
</tr>
<tr>
<td>Contents</td>
<td>... out of the comprehensive contents those essential ones have to be selected which are necessary to achieve the objectives</td>
<td>Curriculum, syllabi, Company training plan, Lesson plans, Textbooks, Programmes, Media, Course files, Engineering drawings</td>
</tr>
<tr>
<td>Methods and conditions</td>
<td>... to impart the contents appropriate methods of learning and working have to be applied with respect to</td>
<td>Personal lesson plans, Methodical guides</td>
</tr>
<tr>
<td>Steps of planning</td>
<td>Purpose</td>
<td>Document</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>Organisation</td>
<td>... the rotation of trainees and the duration of individual training at each workplace have to be organised in a way that the contents can be imparted within a given overall training time</td>
<td>✓ Organisation of institution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Budget planning sheet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Action plan of trainers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Attendance lists</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Course plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Individual Workshop plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Rotation plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Workstation plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Machine operating plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Classroom plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Layout of workshops</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Order lists for tools and material and consumables</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steps of planning</th>
<th>Purpose</th>
<th>Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results</td>
<td>... the results secure the achieving of objectives, therefore results have to be measured and settled, tests and examinations are means to secure the results</td>
<td>✓ Monitoring protocols</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Evaluation sheets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Examination ordinance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Questionnaires for oral and written tests</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓ Examination</td>
</tr>
</tbody>
</table>
This selection displays the most usual set of documents applied within a training institution. Usually a training institution applies standardised or uniform forms in their departments. In that way the training management can ease the procedures of planning, organisation and evaluation of training.

**Planning objectives, contents and results**

The training regulation combines the legal basis of training in a certain occupation with a curriculum and displays objectives and contents of training.

Contents of a training regulation:

- ✔ Name of the nation-wide acknowledged occupation
- ✔ Description of the occupational profile
- ✔ Duration of the entire training
- ✔ Description of objectives and contents of training in a general training plan indicating duration’s of training
- ✔ Examination requirements
- ✔ Other additional regulations

In addition to the training regulations, which are the legally binding documents and didactic basis of vocational training for the practical training in companies, general curricula are also applied.

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### Standard content to introduce a skill

Whenever an instruction has to be conducted in order to introduce a new skill, the following topics of knowledge should be imparted.

Add a checking mark ✓ after you have made your written preparation:

<table>
<thead>
<tr>
<th>Steps</th>
<th>Topic</th>
<th>check mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Purpose of the skill</td>
<td>☐</td>
</tr>
<tr>
<td>2.</td>
<td>Kinds of tools, measuring instruments, devices and accessories applied for the skill</td>
<td>☐</td>
</tr>
<tr>
<td>3.</td>
<td>Functional principles of tools</td>
<td>☐</td>
</tr>
</tbody>
</table>
4. Quality control and functional test of tools
5. Preparation of working place and clamping of workpieces
6. Methods of applying the tool
7. Calculations to set up the tool
8. Methods of checking the quality
9. Maintenance and storage of tools, measuring instruments
10. Work safety

**Task**

1. Please develop a list of planning documents which you need:
2. Please develop a plan for a training module:

**Unit 2: Arrange the physical learning environment, design workshop**

be able to prepare workshop conditions for training and manage resources:

- Creating appropriate arrangement of working place
- Selecting and arranging of equipment and tools for training
- Creating a communication and training corner
- Care taking for tidiness at the working place
- Selecting and managing of availability of raw material and consumables for training purposes

**Evaluation criteria for including a new course of training in existing training establishments**

The implementation of a new course is marked out by the system of training in practice, by the corresponding legal foundations and by all the directives and regulations in force.
The scope and contents of training are thus fixed, and plans can now be made for the timetable and allocation of rooms. This can only be completed in direct cooperation with the institute in question.

PLANNING STAGES

Assuming that a seminar participant has been authorized in the situation described above to conduct further planning, he must undertake the following measures:

1. Produce a plan of the number of rooms and hours required for the new course of training with lists of equipment.
2. Make an inventory of existing room facilities and available equipment.
3. Establish the technical qualifications and teaching load of the training staff already employed.
4. Make an exact definition of free capacities with regard to room facilities, equipment and teaching staff.
5. Determine the uncovered demand in all three sectors.
6. Decide on possible expansion, e.g. accommodation and running of the new course of training.

ADVICE

7. The following must always be taken into account in all the measures mentioned above:
   a. Every proposal must be justifiable;
   b. Decisions and findings must be recorded in writing;
   c. Every action must be taken within the scope of valid laws and directives;
   d. All steps taken are to be coordinated with and agreed to by the authorizing body.

Reference:
How Do I Plan the Allocation of Rooms and Timetables? (DSE) Trainer’s Handbook - A 14 Days Teaching Methodology Course (DSE)

Prepare the environment for training

The most important concern for any trainer is that learning can take place in an effective and efficient manner. Anything that hampers learning, such as noise, or inadequate lighting, should be corrected.

It is important that the physical environment of a classroom or workshop be as efficient and safe as it can be. The health and safety of trainees and trainers are of great concern, and any adjustment that would help to make working in the classroom/workshop safe & pleasant should be investigated and implemented as soon as possible.
The physical environment of a classroom/workshop should be controlled and maintained for the following reasons:

- To safeguard the health of learners and the instructors.
- To maximize learning.
- To improve feelings of well being.
- To demonstrate professionalism on the part of the training area.

Task

Control workshop environment

The most important concern for any trainer is that learning can take place in an effective and efficient manner. Anything that hampers learning, such as noise, or inadequate lighting, should be corrected.

It is important that the physical environment of a classroom or workshop be as efficient and safe as it can be. The health and safety of trainees and trainers are of great concern, and any adjustment that would help to make working in the classroom/workshop safe & pleasant should be investigated and implemented as soon as possible.

<table>
<thead>
<tr>
<th>Control the Physical Learning Environment Performance Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the trainer:</td>
</tr>
<tr>
<td>1. Maintain adequate illumination levels in classroom/laboratory?</td>
</tr>
<tr>
<td>2. Avoid reflectance and glare on the work surfaces and on the chalkboard?</td>
</tr>
<tr>
<td>3. Ensure proper ventilation?</td>
</tr>
<tr>
<td>4. Control dust, smoke, fumes, gasses and odours?</td>
</tr>
<tr>
<td>5. Maintain appropriate temperature &amp; humidity if possible?</td>
</tr>
<tr>
<td>6. Maintain noise level below 75 dB without hearing protection equipment provided?</td>
</tr>
<tr>
<td>7. Take steps to control classroom/laboratory reverberations/ echoes?</td>
</tr>
<tr>
<td>8. Organize pleasing and comfortable physical settings?</td>
</tr>
<tr>
<td>9. Select appropriate colours for classroom and laboratory?</td>
</tr>
</tbody>
</table>

For successful control on the physical environment all items should be checked "Yes".

The physical environment of a classroom/workshop should be controlled and maintained for the following reasons:

- To safeguard the health of learners and the instructors.
✓ To maximize learning.
✓ To improve feelings of well being.
✓ To demonstrate professionalism on the part of the training area

Unit 3: Organise workshop safety and install a cleaning and maintenance system
Trainers take good action to create awareness and confidence in work safety. Trainer possesses instruments to perform work safety instructions efficiently. All necessary actions to maintain a high standard of work safety as well as what to do in case of emergency, fire, hazards or accidents are considered and well introduced. The in-company trainer is able to

✓ Explain the safety standard of the company
✓ State undesired behaviour and effects
✓ Demonstrate the fire fighting equipment (extinguisher etc.
✓ Show fire points, fire exits and first aid kid
✓ Introduce the actions in case of hazards
✓ Introduce sound alarms
✓ Prepare visuals about work safety

1. Plan of work safety instruction (indicates the contents of the instruction in a logical and systematic way)
2. Lay-out of the company indicating areas of importance towards work safety (displays the fire points, fire exits, places of first aid kids, emergency exits etc.)
3. Emergency regulations (describes the necessary actions to be done in case of emergency)

In areas in which trainees already have some knowledge or experience, discussion may be used to develop the main points to be covered in a lesson. For example, in safety training many of the procedures and behaviour that should be observed can be established through discussion with trainees. Trainees can draw on their experience of working in workshops contract sites to contribute to the discussion. In discussing some issues, differences of opinion arise. The discussion can help to clarify the different points of view and may assist each trainee to define his or her own opinion. Used in this way, discussion may be more effective in motivating trainees than lectures. Trainees can see that some importance is attached to their contributions.

Arrange cleaning and maintenance
A well managed, cleaned and maintained classroom and laboratory is like a smooth running piece of machinery. Every classroom and workshop will have common cleaning
and maintenance aspects: controlling the environment; controlling tools, equipment and supplies; maintaining tools and equipment; and maintaining a trainee personnel system. A clean and well maintained classroom/workshop:

- Facilitates instruction;
- Provides a safe work-setting;
- Develops good occupational work-habits;
- Attracts new trainees to become involved and be proud to be a part of the program.

An unclean and poorly maintained classroom/workshop:

- Can be dangerous to life and property;
- Gives a bad and unprofessional impression;
- Generates a negative impact on the trainees as well as to the instructors as regards to motivation;
- Makes doing quality work more difficult.

To maintain a classroom/workshop in good order, the following items/areas should be cleaned and maintained regularly:

- Equipment, instruments and machine tools;
- Individual work area or work stations.
- Furniture; floors;
- Doors, windows; curtains;
- Supplies and materials;
- Safety and first aid equipment and supplies.

Trainees should be involved in the ongoing management of the classroom and workshop. They can learn some of the general responsibilities of their occupation, and they can assume some of the load that otherwise trainers have to carry alone.

Guide (Handout):

<table>
<thead>
<tr>
<th>Organise classroom and workshop safety</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Develop and implement tool and equipment safety procedures</strong></td>
</tr>
<tr>
<td>For each tool or equipment that represents a possible hazard to users, a safety procedure or checklist should be developed, given to users and posted at the tool or equipment.</td>
</tr>
</tbody>
</table>

| **Instruct trainees on personal protective devices** |
| Instruction must be given on the necessity for using personal protective devices. Successful completion of the course should depend on the trainee demonstrating safe practices |
Develop and administer general and specific safety tests
Safety tests should be developed, administered, and kept on file for all trainees. These tests should cover general shop and workshop safety and specific safety procedures for hazardous equipment. Trainees should be required to pass safety tests before being allowed to operate hazardous equipment or tools.

Instruct trainees on emergency medical procedures
Trainees should be instructed on basic first aid techniques appropriate to the trade.

Demonstrate safety techniques
The trainer in a program should, through personal action, demonstrate safety techniques. If a trainer is not concerned about safety, the same attitude will transfer to the trainees.

Display safety warnings
Safety signs or posters should be placed at all hazardous equipment. General safety signs should be posted in the workshop area and should be changed at least once a month.

Train trainees to assume safety responsibility
Trainees should play an active role in designing the safety program and in policing the work area for safety violations.

Train trainees to assume safety leadership
Trainees should be given the responsibility to "take charge" of the safety program for a period of time. During that time, they should review the safety program and make recommendations for improvement.

Train trainees to recognize and control hazards
Trainees should be able to walk through the shop or lab and identify actual or potential hazards.

Provide instruction on standard color coding
Trainees must know the meaning of standard safety colour codes.

Establish and maintain procedures for safety inspections
A written procedure must exist that outlines the safety inspections that will be conducted in the shop.

Checklist:
A trainer working in workshop areas and classrooms has responsibility for certain resources for training.
### Workshop:

| ✔ | Machinery, tools, devices and accessories be available for training purposes: take care for proper condition, good and protected storage, daily cleaning. |
| ✔ | Space for training, that could be established as a training corner: separate from production areas, quite and tiny, appropriate for communication |
| ✔ | Rawmaterial and consumables as well as old products, old models and workpieces from previous tasks to be available for training according to the number of trainees |
| ✔ | Protective clothes, safety helmets, protective goggles, industrial gloves and other equipment for personal protection to be provided by the company |
| ✔ | Time to be provided for instructions and demonstrations and vocational guidance to be settled according to a schedule |

### Classroom:

| ✔ | Room appropriate for conversations and communication, equipped with sufficient tables and chairs (even meeting rooms) |
| ✔ | Supporting teaching aids, as blackboard, paper and pens, technical documentation's and other suitable aids to be available and carefully stored |
| ✔ | Access to the classroom or meeting room according to the time schedule to be discussed with other users |

Check permanent the availability of resources and their proper condition. In case of lacking approach your superior for decision making.

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**Example: Drill Press Safety**

**Safety Rules**

- ✔ Never wear loose clothing around machinery
- ✔ A hair net or a cap must protect long hair to prevent it from becoming caught in the revolving parts of the drill press.
Never wear rings, watches, bracelets or necklaces while working in a machine shop.
Always wear safety glasses when operating any machine.
Never set the speed, adjust or measure the work until the machine is completely stopped.
Keep the work area and floor clean and free of oil and grease.
Never clamp taper shank drills, end mills, or non-standard tools in a drill chuck.
Never leave a chuck key in a drill chuck at any time.
Always use the brush to remove chips.
Always clamp work pieces when drilling holes larger than ½ in. (12.7 mm) in diameter.
When drilling sheet metal, it is necessary to clamp the sheet on a piece of wood.
Reduce drilling pressure as the drill breaks through the work piece.
Always remove the burrs from a hole that has been drilled.

Examples of Daily Routine Activities

Before Start of Shift (15 - 30 minutes)

✓ Check production schedule and/or work orders for the day
✓ Check equipment to be used
✓ Check supply of materials for the day
✓ Check tools needed for the day
✓ Line up equipment, materials, and tools for the day
✓ Line up firm work schedule for the day

Beginning of the Shift (15 - 30 minutes)

✓ Check attendance and assign employees to work stations, get support from your "group leaders"
✓ If necessary (because of absences), balance the work force by changing assignments or by securing additional help from other departments (discuss with management)
✓ Assign production and/or work orders
✓ Stress critical qualities to watch
✓ Specify when the work should be completed

During the Shift (6 - 7 hours)

✓ Check workmanship with each employees, approve, correct, instruct or train as needed
Check work progress with each employee. Add help, allow more time, or assign additional work.

Check housekeeping, this is a continuous process! Good work cannot be done in an untidy place!

Check back when production or quality appears unsatisfactory, especially with new employees.

Stay on the shop floor supervising and/or available for questions, assistance, and instructions most of the time.

Be on the floor immediately before and after breaks and for 15 minutes before quitting time.

Inspect critical quality areas as work progresses. Correct problems as soon as they are detected.

Perform final inspection of parts, subassemblies, and so on, before they move to the next department (if possible, get group leaders involved).

Check/Report/Conduct a study on recurring quality problems.

Check periodically to see that materials and supplies are on hand.

Check periodically to see that tools and equipment are in proper operating condition.

Report material shortages or recurring defects.

Report and/or request maintenance, repair, or replacement of defective tools or equipment.

Once a Day

Observe one employee or work station continuously for 15 minutes.

Look for time wasted, dull or improper tools, need for work positioning jigs and fixtures, interference, delays and bottlenecks, and expenditure of excessive time to get parts and materials. Do find ways to cut costs or make improvements in any of these.

End of Shift (15 minutes)

Make a list of unsolved problems that came up during the day. Consider ways to handle them.

Think about jobs that have to be done the following day / shift like checking production and/or work orders, materials and tools.

Complete all paperwork. Avoid holding any paperwork for the following day.

Make a list of jobs that must be done the next day. Take it home with you and complete it before coming to work. Use this form to make your own daily plan!

Reference: Supervisory Development Program - A Seminar for Improving Supervisors Skills (DSE)

Task 1/1
**Arrange cleaning and maintenance**

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- Provides a safe work-setting;
- Develops good occupational work-habits;
- Attracts new trainees to become involved and be proud to be a part of the program.

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- Can be dangerous to life and property;
- Gives a bad and unprofessional impression;
- Generates a negative impact on the trainees as well as to the instructors as regards to motivation;
- Makes doing quality work more difficult.

**Task 1/2**

To maintain a classroom/workshop in good order, the following items/areas should be cleaned and maintained regularly:

- Equipment, instruments and machine tools;
- Individual work area or work stations.
- Furniture; floors;
- Doors, windows; curtains;
- Supplies and materials;
- Safety and first aid equipment and supplies.

Trainees should be involved in the ongoing management of the classroom and workshop. They can learn some of the general responsibilities of their occupation, and they can assume some of the load that otherwise trainers have to carry alone.
### Classroom/Workshop Cleaning & Maintenance Performance Guide

<table>
<thead>
<tr>
<th>Did the trainer:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop, with the trainees, a plan of clean-up and maintenance duties?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Give clear guidelines, instructions and orientation to the trainees?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Display duties for each cleaning &amp; maintenance area?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Motivate trainees to do the duties?</td>
<td></td>
<td></td>
</tr>
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<td>5. Develop a fair and regular supervision system that includes the trainees?</td>
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<td>6. Distribute tasks to the trainees fairly and equally?</td>
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</table>

### Task 2/1

**planning conditions & resources**

A trainer working in workshop areas and classrooms has responsibility to plan the conditions and resources for training.

Add a checking mark after you have made your written preparation: ✔

**Prepare the environment for training**

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### Task 2/2

**Arrange cleaning and maintenance**

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Unit 4: Introduce students in the working environment

Trainers have a systematically and complete approach to introduce trainees, normally done at the very first day within the company. Trainers take action to perform a comprehensive and complete introduction which speeds up the familiarisation of trainees’ and new entrants. The development of rules and regulations (if not yet available) provides a standard of behaviour to avoid accidents and wasting of resources. The in-company trainer is able to

✓ Make trainees familiar with the entire working environment
✓ Inform about business activities of the company, products, services
✓ Introduce to important and responsible persons and departments
✓ Inform about organisation and work flow
✓ Provide rules and regulations for appropriate working behaviour

1. Checklist of the contents of instruction (indicates the essential information of the company to be given, e.g. philosophy of the company, expected behaviour, what to do and what to avoid)
2. Checklist of persons & departments to be introduced and visited (displays names of responsible and important persons of the company as well as departments, work stations, etc. that the trainee should know.)
3. Rules and Regulations (written description of the desired working behaviour and what to avoid)
Checklist:

Introduction of trainees and new entrants in the working environment should be done at the first day of attendance and requires certain activities:

- Prepare documents to be handed over, like rules and regulations, work safety standards, trainees attendance register or report book, list of necessary information's
- Meet the trainees in a tiny and quite meeting room to conduct your introduction according your list of necessary information's
- Mind the particular psychological situation as uncertainty, anxiety, nervousness, awe of new persons etc.
- Inform about expected standard of behaviour and how to do the work, organisation of work, responsibilities etc.
- Mark an excursion and show the places important to know, show the emergency exit, place for fire fighting equipment and sanitary rooms.
- Arrange meeting of trainees with persons important to know and provide time for short interviews with the superiors
- Hand over protective clothes and introduce the particular working place as well as the equipment and tool provided for training.
- Conduct a first work safety instruction and record the participation, continue with information about targets according to time and quality standards

Unit 5: Select practical learn and work tasks and organise a file system on exercises and related documents

Trainers get methodical guidance to prepare and perform instructions in a high quality.

This knowledge - appropriate applied - will be effective, directly focused towards the needs and ease the acquiring of necessary technical knowledge by the trainees’ and new entrants.

The in-company trainer is able to

- Define learning objectives and contents for instruction
- Prepare a logical sequence for instruction on job tasks
- Provide technical information by written documents
- Motivate trainees to work towards good quality
- Apply techniques in communication and good questioning
✔ Apply feedback techniques

1. Written sequence of steps of work for on a typical job task (indicates all steps of a job task in a systematically order)
2. Instruction plan (indicates the contents of instruction, by using steps of work)
3. List of job tasks to be introduced (states all job tasks, that need instruction and written preparation)

Example:

<table>
<thead>
<tr>
<th>Short Course:</th>
<th>Instruction Plan for Learn &amp; Work Tasks</th>
<th>Term</th>
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<tbody>
<tr>
<td>Learn &amp; Work Task:</td>
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<tr>
<td>Workshop:</td>
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<td>Trainer:</td>
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<tr>
<td>Sketch (engineering drawing /circuit diagram)</td>
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<td>Time:</td>
<td>Content - Main Topics:</td>
<td>Methods:</td>
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</table>

Task
preparing a simple working plan

Before starting an exercise as a part of instruction, a simple working plan has to be elaborated. During the first exercises guidance will be necessary, later the trainee should elaborate the form independently.

<table>
<thead>
<tr>
<th>Nº</th>
<th>Steps of operation</th>
<th>Tools / Measuring instruments</th>
<th>Check points</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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Unit 6: 4-step method

The background of the 4-step-method

The traditional 4-step method

1 Explanation
2 Demonstration
3 Imitation
4 Practicing
In practical training within craft and industry the 4-step-method has been applied for 60 years in Germany. The roots of the method lie in the USA, where in industry effective solutions had been searched to train people quickly and reliably to operate automatised production lines.

Within that method the acquiring of practical skills follows 4 steps, which give the method their name. The steps are called: explanation, demonstration, imitation, practising.

During application of the method a small part of a working task will be explained by the trainer, then the trainer will demonstrate the skill. After that the trainee has to imitate the skill as demonstrated before. The trainer will correct the trainee, he will give hints. A time of practising will follow until the trainee has achieved an acceptable standard of performance.

For the practical application we can summarise:

- ✔ After appropriate performance praise should follow immediately, a false answer or a bad performance should be criticised.
- ✔ During practical work: A short working step will be introduced, imitated by the trainee and practised in several repetitions. Small steps of work are essential for the success of learning.

Today the method is extended by certain didactic elements (continuing motivation, intermediate progress checks, break down of the work task in several sub-steps etc.) and when the approach for application is more complex. So exercises can be introduced which include more than one skill or operation. Explanation and demonstration can also be performed in sub-steps. During training of skills the 4-step-method has been proven mainly for the training of practical skills on the shop floor level and will still be applied in the future.

**Actions within the 4-step-method**

The 4 steps can be described by the nature of actions of trainers and trainees:

<table>
<thead>
<tr>
<th>Trainers teach by:</th>
<th>Trainees learn by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 explaining</td>
<td>listening</td>
</tr>
<tr>
<td>2 demonstrating</td>
<td>watching</td>
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<tr>
<td>correcting</td>
<td>3 imitating</td>
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<tr>
<td>evaluating</td>
<td>4 practicing</td>
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</tbody>
</table>
### 1st step: explaining (motivation - information)

The trainer chooses an appropriate learning environment for the explanation, either in a classroom or a workshop. That depends on the nature of the tasks and skill to be learnt. He or she ensures to conduct the instructions within 20 or 30 minutes. A task-directed instruction always starts with motivation of trainees, to get attention and interest of the trainees. Then, all necessary information to carry out the task will be given. He or she uses learning aids and media for example engineering drawings, circuit diagrams, working plans, operating manuals, tools and raw material as well as visual aids. He or she explains the working steps in their logical sequence. On a higher stage he/she requests the development of a working plan. During this step he/she can use good or bad examples of work pieces to present and visualise the differences in quality, trainees remain mostly passive, they just watch and listen.

### 2nd step: demonstrating

The trainer demonstrates the steps of work. He or she has already prepared a work place with all tools, raw materials as well as the working plan and if necessary, a machine is set up.

During the demonstration he calls for attention and assures enough space for the trainees to watch. The demonstration should be conducted 3 times:

1. **1st demonstration:**
   - Task will be performed in normal speed so that the trainees get a complete and realistic impression and a clear picture.
2. **2nd demonstration:**
   - Task will be repeated at a slower speed to emphasise the individual steps and to focus on particular details including comments on industrial safety.
3. **3rd demonstration:**
   - Task will be repeated again at normal speed to create the proper internal image.
The trainer always gives explanations. The direct part of instruction by the trainer is then finished.

3rd step: imitating

The trainees now are requested to take action as demonstrated before. The trainer corrects if necessary, good performance will be praised, bad performance will be criticised and corrected. Sometimes it will be necessary to demonstrate again. When the trainer gets the impression that each trainee has understood the procedure, he gives the signal to start practising.

4th step: practising (exercising)

The trainer provides sufficient raw material for the trainees. They use necessary tools and equipment. Each trainee works individually and applies the same procedure.

If a standard of acceptable performance is achieved the task can be finished. The trainer checks the quality.

Remark:

During the 1st and 2nd step the trainer should check prior knowledge. If there is a lack of knowledge, he will conduct a lesson.

Providing of teaching aids and material for exercising

The 4-step-method does not need an expensive or time consuming preparation.

Teaching aids applied for the 4-step-method are usually original working documents e.g. engineering drawings or circuit diagrams, a working plan with the steps of work as operations, an evaluation sheet to mark the results.

The working plan should be filled in by the trainees as a personal document. Often a certain form will be applied. The evaluation sheet should be provided as a form to be filled in and it should be carefully filed.

In addition to that, handouts can be distributed as an extract of textbooks or operating manuals.
Materials for practising or exercising are usually raw material and consumables to be used for the practical training. They depend on the nature of the task.

The trainer should plan the procurement of those materials at least one year in advance. It depends on:

- The number of trainees per year
- The quantity of exercises per year
- The amount of raw material and consumables depending on the size and dimension of the respective work pieces.

**A simple example:**
To perform an exercise for filing a square profile of 40 mm x 40 mm x 100 mm in necessary. During the year 30 trainees will carry out the exercise. Following this example a length of 3 metres is necessary to provide (30 persons x 100 mm).

Some remarks for planning:
To make the yearly planning of exercises, the trainer should develop a document with the following indicators:

- Name and amount of exercises for the entire course
- Availability of technical drawings or circuit diagrams for the number of trainer per course
- Indication if raw dimensions for each new material according to each exercise (final dimension plus scraps)
- Indication of necessary tools, measuring instruments, accessories and machines
- Indication of skills and a rough estimated time to acquire the skill

Another indicator in the wear and tear of tools: It has to be considered to replace old tools by new tools, after a certain period of application. The trainer should have an idea about that time.

For the provision of tools we distinguish:

- Tools for common application in the workshop (special or expensive tools) managed by the trainer
- Tools for the individual work places (to be handed over to trainer)
- Machine tools
- Tools of the trainer

Exercises can be carried out simultaneously by each trainer, if each trainee is provided with his individual tools and measuring instruments.

If not possible, the organisation of exercises has to be done in rotation.
Task

4-step-method

Develop a description of application of the 4-step-method:

<table>
<thead>
<tr>
<th>step</th>
<th>description</th>
<th>activities</th>
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<tbody>
<tr>
<td>1. Explanation</td>
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<td>2. Demonstration</td>
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<td>3. Imitation</td>
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<td>4. Practising</td>
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Unit 7: "Leittext"- method

The background of the "Leittext"-method (Guided text method)

The Leittext-method was originally developed in the 1970s at the Daimler Benz’ training centre in Gaggenau for use in conjunction with a project-based-training scheme involving self-guided video learning programmes.

The "Leittext" idea came from practitioners, not from scientists and it has been further developed by various theoretical concepts and takes its place alongside the various other training concepts and methodologies.

Within the Leittext-method we follow a sequence of 6 steps, which are:

1. Information
2. Planning
3. Decision-making
4. Executing
5. Checking
6. Evaluating (final assessment)

Trainee learns by:

1. Independent investigation
2. Independent planning
3. Independent decision making
4. Independent executing
5. Independent checking, evaluating
6. Self – assessment

Trainer teaches by:

- Providing teaching aid and guiding questions, when necessary, instructing
- Providing planning documents and forms
- Discussing proposals made by trainees
- Providing tools and raw material discussing problems
- Developing evaluation sheets and control docs. together with trainees
All steps are performed by the trainees themselves. The self-guided learning approach was initially intended to cater for the needs of trainees with different learning speeds. The quicker learners did not have to wait until the trainer's instruction has been made clear to the entire group before tackling new learning material. Because there was no appropriate time to perform the instruction for new working tasks, trainees got the opportunity to work their own way through new learning material. Teams were set up composed of trainees with similar learning speeds. A tutorial with the trainer rounded off each learning unit in order to ensure that the content had been properly understood.

**Actions within the "Leittext"-method**

A basic objective of training in Germany is to qualify trainees for solving occupational tasks including independent planning, execution and control at the workplace. That demand should be fulfilled by the skilled workers within their job-practise.

But those actions mean the skilled worker executes his tasks independently without guidance by his superiors. That means, before starting a task he has to plan the work steps, to set the operations, to choose the appropriate raw material and to perform an evaluation of achieved quality. Independent planning also requires the respecting of economical aspects and the consideration of environmental protection as well of saving of energy.

**Instructions within the "Leittext"-method**

Basically the trainer does not conduct a traditional instruction, but he gives tutorials. Emphasis is always given to the self-learning of trainees, only in case of problems he will interfere.

**1st step: informing**

During this step already self-learning takes place. The trainer provides all necessary sources, such as instructional material, engineering drawings, textbooks, technical tables, forms of work plans etc. The trainees have to gather all information about the work task by themselves, without help of the trainer. They can do that individual or in groups. (focus: self-learning-skills and co-operation/communication skills ...).

To arrange that, the trainer will hand over a well-prepared questionnaire with guiding questions, what means - by answering these questions the trainee will know what to do. These questions guide self-learning. Each source of information is considered to be a guiding text. The answers of the guiding questions are already the information necessary to plan and execute the task.

In the case the trainees face problems, they should try to solve it first without the trainer (focus: problem-solving skills ...), but the trainer is ready to assist and will instruct as needed.
2nd step: planning

The trainees continue to answer the guiding questions, during this step the task is: planning of the work. They try to draft working plans. The trainer is ready to assist, but will basically avoid interfering (focus: problem-solving-skills, thinking in advance ...).

3rd step: decision making

The trainees present their results and discuss the various ways of solutions in order to find the most efficient way (focus: objectiveness in argument, communication skills, ability to emphasise ...). The group will decide, what will be the best solution, e.g. what is the best sequence of working steps. The trainer is ready for assistance, when necessary (focus: decision making skills, creativity ...).

4th step: executing

Trainees execute their tasks individually or in groups, following the commonly agreed working plan. They acquire practical skills by practising as usual. (focus: accuracy, systematic-approach, carefulness ...) The trainer monitors the process and takes an observation protocol.

5th step: checking

After finishing the work the trainees check the quality of their work applying an evaluation sheet, to learn to assess the standard of acceptable performance. (focus: self-evaluation, self-discipline, reliability ...) The trainer performs just occasional checks.

6th step: evaluation

At the end the trainer calls for a final discussion, trainees give personal assessment and group feedback (focus: self-assessment, awareness of quality, aptitude for self-criticism ...). The trainer will present his observation results and given his personal feedback to the group.

Providing of teaching and training aids

Because the basic idea is to enable the trainees to perform self-learning, teaching and training aids have to be designed for the purpose of self-learning.

All those teaching and training aids used in practical training (compare the 4-step-method) are suitable for the application of "Leittext"-method. But they need additional elements, like guiding questions and a set of particular forms.

Firstly learn and work tasks have to be selected out of the practical field. Then learning objectives considering key-qualifications have to be set as well. For example, if the ability to co-operate should be enhanced, the tasks have to be performed by organisation of teams so that a need of co-operation arises. Those tasks can only be performed by co-operation of team-members.
Teaching and learning aids are originals of the working place, like engineering drawings, circuit diagrams, work plans and evaluation sheets. In addition to that the guiding questions and textbooks and tables, encyclopaedia and others are applied.

**Task**

**Leittext- method**

Please develop forms for the application of individual steps within the "Leittext-method":

| ✓ Informing | ✓ task description, description of function, |
| ✓ Planning/decision making | ✓ working plan, list of material |
| ✓ Executing | ✓ monitoring protocol |
| ✓ Evaluating | ✓ evaluation sheet, final assessment sheet |

**Unit 8: Project method**

**The background of the project-method**

The concept of the project-method meets the needs of the small and medium-sized industry to train skilled workers more efficiently. Nowadays the labour market demands highly qualified skilled workers not only equipped with knowledge and skills, but also with personal attitudes in the area of personal and social competences.

Skilled workers should be able to:

- Take initiative
- Solve problems systematically
- Make decisions independently
- Be flexible
- Learn by own drives
- Be co-operative and act with responsibility
Key-qualifications are required in modern working situation during individual and team work. Reasons are new technologies and manufacturing process which make new demands upon workers in the industrial-technical sector. New forms of organisation in production-process have also a great influence.

The project approach targets towards key-qualifications to be acquired already during vocational training, not only when working in the companies. Therefore they have to be developed in line with technical and methodical skills.

A particular comprehensive and systematic concept of the project-approach has been developed by the SIEMENS AG and is labelled as "PETRA-Project - and transfer-oriented training".

**Actions within the project-method**

The project method can be applied during the entire training process. Presupposition is the identification of a project with the following features:

1. A clearly outlined definition of a task, e.g.
   - Manufacture of a workpiece from the planning stage right through to quality inspection
   - Optimisation of an electrical circuit including description of function
2. A complex task from the trainees point of view, e.g.
   - The task demands transfer output
The implementation initially causes difficulties
- More knowledge and skills are required than are immediately accessible

3. The implementation of the task is done by trainees, individually or with others, e.g.
- Combining the knowledge acquired at various places in such a manner that enables the implementation of a new task
- Planned, mainly by independent action

A project should serve to learn, to combine theory and practise, it also should have a direct relation to the practical task in the department and should be planned independently and should be implemented mainly self-directed and self-organised by trainees. Trainer should have the possibility to develop own methods and strategies to solve problems and to organise co-operation between team-members.

Generally, the trainees work together in teams - from planning via executing to evaluation. That always needs a good motivation. The trainer monitors and supervises the systematic learning, but this influence should be limited to a minimum.

Main purpose of the project-method is to acquire all necessary skills and knowledge to fulfil the task during the entire process. On the other hand emphasis is always be given to the development of key-qualifications. The preparation of project-work includes - similarly like the Leittext-method the following tasks:

- Identification of a project
- Elaboration of a task description
- Planning of time and organising the process
- Considering projects with respect to the pre-knowledge of trainees
- Supervising the trainees and supporting them in case of problems.
Forms of organisation within the project method

As the promotion of trainees in the key qualifications takes place during the acquisition of skills and knowledge, three organisation forms which support this process are set up by the instructor:

- ✔ Self-motivated individual work (SIW),
- ✔ Group-planned individual work (GIW),
- ✔ Group work (GRW).

These three organisational forms are used alternately according to the key-qualifications to be promoted, the level of experience of the trainees, and the task set. During instruction and company training, the instructor should consider which information is actually necessary to accomplish the tasks set. As the level of training rises, the information provided by the trainer should decrease and the self-motivated activities of the trainee increase.

The relation between forms of organisation and key qualifications is obviously. Considering the self-motivated individual work, individual personal and technical competence's are promoted. But group-planned individual work and group work promote more social competence's in line with technical competence's.

Self-motivated individual work

After receiving the project documents each trainee plans the project an his own, executes it on his own and evaluates it on his own. There is no communication between trainees.
**Group-planned individual work**

After receiving the project documents the trainees sit together and perform together the stages: “informing - planning - decision making”. The execution of the project will be done individually. During planning each trainee has joint responsibility, but during execution and evaluation he has independent responsibility.

**Group work**

After receiving the project documents the group of trainees plan are decide together. The project will be separated in sub-projects, and technical milestones (interfaces) will set. Detailed planning for the sub-projects will be done individually. After that trainees are small teams execute the sub-projects. On a later stage they bring together the sub-project to a full operating project.
**Project – method**

Please develop forms for the application of individual steps within the "project-method":

| ✓ Informing               | ✓ task description, description of function, |
| ✓ Planning/decision making | ✓ planning of the task, working plan, task description, list of material |
| ✓ Executing              | ✓ monitoring protocol |
| ✓ Evaluating             | ✓ evaluation sheet, final assessment sheet |

**Note:**

If you have completed all units of the module, you can go ahead to the next modules. If you have not completed all units of the module, you are recommended to complete those missing units first before going ahead.
MODULE 8:
Action oriented teaching with learning and work assignments

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<thead>
<tr>
<th>Nº</th>
<th>Name of Unit</th>
<th>Tests</th>
<th>Tasks</th>
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<tr>
<td></td>
<td>General information</td>
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<tr>
<td>Unit 1</td>
<td>Psychological background of the learning theoretical explanation for the development of learning and working assignments</td>
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<td>Unit 2</td>
<td>Closed assignments</td>
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<td>Unit 3</td>
<td>Open and semi-open assignments</td>
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<td>Unit 4</td>
<td>Working with guidance scripts as an instrument for open assignments</td>
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<td>Unit 5</td>
<td>Organisation and assessment of learning and working assignments especially of guidance scripts</td>
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SPECIFIC OBJECTIVES OF MODULE

In module 8: "Action oriented Teaching with Learning and Work Assignments" you will learn:

✓ About learning and working assignments, their meaning within vocational education and for the individual learner as well as about the structure of learning and working assignments

✓ About the psychological aspects of the learning theoretical explanation of the development of learning and working assignments, starting with the Four-Step-Method (Behaviourism) to the model of Interiorisation (GALPERIN), the TOTE-units (MILLER, GALANTER und PRIBRAM) and the CCF- units (HACKER)

✓ Acquire knowledge about the steps of a complete act

✓ Using the characteristics of closed and open assignments

✓ About guidance scripts as an instrument for structuring open assignments

✓ Organisation of learning and working assignments

✓ To organise the autonomous structuring of guidance scripts

✓ To understand contradictions in the assessment of achievements in the work with learning and working assignments

PURPOSE OF MODULE

Input:

✓ Theoretical background for the act orientation
Module 8/ IST

- Checklists for the organisation of closed and open assignments
- Criteria and guidelines for the development of learning and working assignments using guidance scripts

**Expected outcome:**

- Understanding the act orientation and the complete act
- Examples for closed, open and semi-open assignments
- Complex work on a learning and working assignment with a structured guidance script

**GRAPHICAL STRUCTURE OF THE MODULE**

*Action oriented teaching with learning and working assignments*

- Psychological background of the learning theoretical explanation of the development of learning and working assignments
- Organisation and assessment of learning and working assignments
- Closed assignments
- Working with guidance scripts as an instrument for open assignments

**GENERAL INFORMATION, 1/4**

Generally, the module 9 will deal with learning and working assignments. The different units will discuss the diverse types of assignments as well as the instruments for the structuring and regulation of acts of the learner.
Why learning and working assignments? 2/4

The educational task of the vocational schools is among other things to provide for a broad vocational education and a specific subject education, which meet the demands of the profession and the demands of the labour market. That means, learners should be enabled to meet changing requirements and take over new tasks. To enable them to become sustainable human beings with acquired vocational skills and abilities ("Handlungskompetenz"), school has to provide the possibilities for acquiring these vocational skills and abilities. Only direct-receptive teaching methods have no relevance anymore for school education. Only the emphasis on complex and comprehensive learning methods, which provide for an independent and self-responsible working within a social arrangement provides for the achievement of key competences for the acquisition of vocational skills and abilities.

The importance for the learners, 3/4

The employee of tomorrow has to meet several demands. He has to recognise connections and explain them, acquire subject unspecific knowledge and enhance his own knowledge, be open for further learning, be self-conscious, reliable, willing to work, safety awareness and responsible, be able to work independently, implement practical work, be versatile, be able to solve dysfunctions, recognize and consider economic connections and be able to work in a team. This means, that the employee of tomorrow is required to work independently within a working process that is getting more and more complex. By working on practical relevant learning and working assignments using open assignments the learner has to work on open tasks, that require a complex working procedure and enhance vocational act competence ("Handlungskompetenz").

In a teaching organisation based on act theory the learner can be acquire the content in a practical relevant way and single content and learning fields can be connected. By this, the contents will become more reasonable for the learners. In the following criteria of a teaching organisation based on act theory the importance of this methods for the learner becomes clear (see also module 5): Learning with working assignments on and with projects in connection to practice as well as learning with complex assignments with open assignments (which provide for learning and motivational stimulations for thinking and acting processes) organised along the process of a complete act as well the complex fostering of the learning. Learning is defined by learning through acting supported by secondary learning forms. Independent and self-regulated learning predominates; the assignments are based on concrete act situations.1

Structure and Conditions for learning and working assignments, 4/4

Learning and working assignments contain a text part with an introduction, learning objectives and a concrete task. They contain text and visualised information for orientation and working sheets with questions and checklists for the solution process. Assignment and company specific working sheets are supplemented by specific vocational learning material. It is to be recommended to mix the didactical material with company material and use real objects. The working on the assignment can occur under real conditions and partly simulated, whereas a variety of combinations of vocational, industry-wide and vocational school parts are possible.
The learners are asked to explain and describe their acts and decisions and to present their results. Emphasis is put on autonomous working and assessment with consultation possibilities at the same time. The achieved subject, methodical and social competence should be assessed by using given criteria. A rough assessment follows the three phases of planning, implementation and transfer.

Learning and working assignments need to be supported by a teacher and/or trainer. The didactical situation in the practice is a connection between learner, learning and working assignments as well as the learning and working environment, whereas the working environment has to be organised to become a learning environment. The working on the assignments can occur as individual work or group work. The organisational structure in the alternation of learning and working phases responds to the learning level and the learning pace of the individual learner. The concept of the learning and working assignments provides the possibility of individualization and differentiation as well as an increased flexibility of vocational education and further training. Seen from a didactical perspective, the implementation of open and experienced guided learning processes can be possible.¹

¹ Co. NIEMANN, B.: Der auftragsorientierte Unterricht im handlungsorientierten Unterricht der berufsbildenden Schule 1999.

Module 9 - TEST

Which of the following three criteria concerning learning and working assignments are correct?

Please choose Answer A, B or C.

<table>
<thead>
<tr>
<th>Answer A</th>
<th>Answer B</th>
<th>Answer C</th>
</tr>
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<tbody>
<tr>
<td>Learning and working assignments are highly structured</td>
<td>The working on the learning and working assignments is directed by the teacher</td>
<td>The working on learning and working assignments is supported by the teacher</td>
</tr>
<tr>
<td>Learning and working assignments are direct-receptive tasks</td>
<td>Learning and working assignments only refer to a specific subject</td>
<td>Learning and working assignments are adjusted to the learning level of the learner</td>
</tr>
<tr>
<td>Learning and working assignments have no relevance for the practice respectively for the real situation of the professional routine</td>
<td>Learning and working assignments are closed tasks, which have only one solution structure</td>
<td>Learning and working assignments require an explanation of the planning, decision and execution processes of the learner</td>
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</table>
UNIT 1: PSYCHOLOGICAL BACKGROUND OF THE LEARNING THEORETICAL EXPLANATION FOR THE DEVELOPMENT OF LEARNING AND WORKING ASSIGNMENTS

To develop learning and working assignments it is necessary to discuss the psychological aspects of the learning theory. The following theoretical explanations should help you to get a first understanding.

Pragmatic model development:

Every alternation of models requires an idea about how humans learn. The human learning process is a very complex process, which is largely unknown to science. Therefore, science uses models to explain the learning process. But models always imply not to comprehend the phenomena in its complexity and be satisfied with a reduced objectification. For building a model it is more important to use simplistic objectifications containing the basic aspects. Basis for conceptual ideas is not a specific theory but rather a problem.

Observable behaviour - the behaviouristic theory of learning:

Approximately since the 1930ies in Germany the vocational education has been dominated by the so called Four-Steps-Method and is still today the most effective (often the only one) method for imparting psychomotor skills.

Four-Steps- Method

![Four-Steps- Method Diagram]

The four steps explaining, demonstrating, imitating and exercising are characteristically for this method. At that time behaviourism played a great role. Only external and methodically used simulation were suitable for controlling and deducing general scientific statements in the perspective of behaviourists. Behaviouristic models can not explain why it is possible to learn to act by thinking processes. But exactly this occurs within vocational education. Learning through observation could not be possible without thinking processes. (In the case of the guidance script method an aimed further development was possible by using the new cognitive learning models instead of the behaviouristic models.)
Learning by Acting:

RUBINSTEIN, a soviet psychologist laid the basis for the development of the Act Psychology. He sees the human being as actively dealing with his environment. Through his acts the human forms his environment at the same time himself. The most important difference to the behaviouristic approach is that learning occurs not by chance through trial and error but that humans think very conscious about how to reach their aims by using certain methods. (Autonomy). These considerations were taken up and developed further by LEONTIEV and WYGOTSKI. Once more, human activity is the basis for the cognitive development.

Thinking develops on the basis of a sensually experiences by execution of the act. It is not necessary to make all the experiences oneself. More over, conscious acting is characterised by calculating the possible consequences. The cognitive estimation of the consequences is not limited to the already made experiences but also on new consequences in fantasy. Acts can be executed in the head and their consequences can be cognitively proven. GALPERIN developed the model of interiorisation. In the orientation phase one gets an overview. In the second phase the act is done. Thereafter it is verbalised, so to speak described. Only then the act is internalised and a mental model developed.

Model of Interiorisation

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<tr>
<th>Model of Interiorisation</th>
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<tbody>
<tr>
<td>1. Orientation</td>
</tr>
<tr>
<td>2. a) Real act</td>
</tr>
<tr>
<td>b) Act on a verbal level</td>
</tr>
<tr>
<td>c) Act on a mental level (internal language)</td>
</tr>
<tr>
<td>3. Controll act</td>
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</tbody>
</table>

The cognitive change - News from America

The three Americans MILLER, GALANTER und PRIBRAM formulated a model about the connection of head and hand respectively about the function of the thinking process for the execution of acts together. Like the soviet psychologists they assume that acts develop in the head. On the basis of his accumulated and structured knowledge the human being makes himself a picture about how something is and how something should be. From the comparison of these two states a plan is developed on how to change the existing state, for reaching the target state. They call this process the TOTE-unit. TOTE stands for Test-Operation-Test-Exit.
Test means the comparison between the target and the actual state. Is there a difference, an operation is done to reach the desired state. After that, a comparison is done and if there is still a difference the operation is repeated. As soon as no difference between the states exists, the process is concluded with exit. MILLER, GALANTER und PRIBRAM assume that this feedback process is a basic element of the central nervous system. All acts are seen as convoluted TOTE-units. These acts are referred to as the cognitive change in psychology.

**Further development of the models - working psychology from Dresden:**

The Dresden psychologist Wilfried HACKER developed on the basis of the soviet act and the American cognitive psychology a general engineer and working psychology. HACKER places an open model instead of the closed feedback model of the TOTE-units. The feedback changes not only the act process but also the aim. He calls it comparison-change-feedback-unit (CCF-unit).
The term of the target should not imply an end situation. The end is only reached after a chain of CCF-units, contains therefore the starting point and all the measures that were used. HACKER's model can be seen as a description of a process and meets our ideas about the understanding of the term self-guided learning.

**How is this process regulated?**

The American psychologists as well as HACKER assume that for the regulation of acts mental plans or act pictures have to be there. These plans do not have to be complete. HACKER thinks of complex acts as a succession of convoluted CCF-units. Whereas the single units are not only after each other effective but also above each other effective. This model explains why we are able to complex acts, without thinking about every single step of the act.

**The model of the complete act:**

Whereas the so far discussed models only explain part of acts, the model of the complete act describes ideal typically how for example a learner or a skilled worker works on a complete assignment or a project.
The complete act

The pedagogical literature differentiates for this kind of complete act six steps: Information, Planning, Decision, Execution, Controlling and Evaluation. Critically to note is that when the complete act is based on the components of the act regulation that for example controlling does not come after execution but rather that there is a permanent control. The components of the cognitive act regulation are shown in figure 7.

Tasks

1. Describe the single part acts of the complete act.
2. Explain the difference between the TOTE-unit and the VVR-unit.
3. Critically discuss the control function of the complete act. Reflect on your own acts. Discuss the solution with your colleagues and in the chat room.
UNIT 2: CLOSED ASSIGNMENTS

Based on the discussed types of assignments in unit 1 we will now deal with closed assignment in this unit. This module will emphasise learning and working assignments which can be classified under open assignments, so that we will not discuss closed assignments at full length.

What are closed assignments?

Closed assignments can be found mainly in the traditional text book or lecture book. They are purpose orientated and only expect one solution or one solution way. The steps for the solution of such an assignment are very detailed.

The structure of closed assignments should not imply a depreciation of these kinds of assignments. They make sure that there is an effective goal achievement, for example for an achievement assessment or they effectively lead to a certain problem, an intensive exercising of basic skills etc.. Furthermore, the clear definition of wrong or right, the fairness of assessment and a clear structured way are characteristics that learners appreciate and rather demand from an assignment Questionable becomes the use of closed assignments when it becomes exclusive and dominate the teaching method.

Closed assignments can be classified as follows:

 ✓ Identification Assignments with answer selection
   The assignment contains elements which should be identified by the learner. It could be single, multi or chain identification according to the impulse.

 ✓ Alternative assignments
   The assignments contain solution alternatives from which there are one to choose. Given are one or more alternative pairs, these in form of similar or different alternative pairs.

 ✓ Assignments with answer selection
   The assignment contains a range of more than one solution as well as more than one distracting false solution. Varieties are single answerer choices or the answer choice of more than one answer, the chain answer (with or without the number of answers) and the collective answer.

 ✓ Compound answer selection
   The assignments give compounds that are to choose. The variants correspond to the answer selection without collective compounds.

 ✓ Supplement answer selection
   The assignment contains blanks that have to be filled in. The variants correspond to the assignments with answer selection but without collective supplements.

 ✓ Substitution answer selection
   The assignment contains elements which should be substituted with other given elements. The variants correspond to the answer selection assignments.
✓ **Extension answer selection**
The assignment contains the complete information as well as an offer of new elements which should complement the given information in a reasonable way. The variants correspond to the answer selection assignments.

✓ **Attribution assignments**
The assignment contains two or more series of elements. The elements of the one series have to be attributed to the other one. There are complete and non-complete single attributions respectively multiple attributions. In the first case no elements are left over in the second case not all elements can be attributed.

✓ **Restructure assignments**
The assignment contains elements which become new meaningful information through restructuring. This can bet he case with alternatives or without alternatives for choosing the elements.

✓ **Substitute assignments**
These are a variant of the selection assignments. The answer selections are substitutes for other assignment forms, that is for chain answer selections, for attribution and for restructuring answer selections.

✓ **Hybrid forms**
As explained the transition between the different types of assignments are fluid. By the way, intended combinations of assignment types are possible, for example multi-attribution and single answer selection.

**Characteristics of closed assignments:**

✓ Clear purpose orientation
Exercise assignments should grind in certain abilities (for example: the firm application of the binominal formulas).

✓ Introduction assignments should lead to a problem situation, which imply the use of a new method or a new term.

✓ Exam assignments have the aim to make the difficulties and strength of a learner clearly visible and are standardised for the fairer and better assessment.

✓ Single-way of the calculating method
The kind of stating the assignment or the subject or methodical organisation of teaching imply only one way to come to the solution. Wrong ways, detours or approximate solutions (explicitly or implicitly) are not accepted.

✓ Existing of an unambiguous solution
The target state is clearly defined, the learners know on the basis of the type of the assignment or because of (explicit or implicit) arrangements done before, when and whether they solved the problem. It is clear beforehand, that the problem can be solved (often with the discussed methods).

✓ Narrowing of the assignment formulation
By using a cut down structure for the assignment formulation or a restriction of the used methods (for example: "Calculate without using the power law...") there are no possibilities for searching own solutions.
Tasks

1. Develop for 5 of the 10 closed types of assignments:
   - Identification assignments
   - Alternative assignments
   - Assignments with answer selection
   - Compound assignments
   - Supplement assignments
   - Substitution assignments
   - Attribution assignments
   - Restructure assignments
   - Substitute assignments

   A learning assignment as well as an answer structure (solution resp. solution structure) regarding your subject.

2. Try these developed assignments with your class!

3. Compare the results with your considerations beforehand!

4. Discuss
   a) your developed closed assignments as well as the answer structure and
   b) the results of the testing with your colleagues and in the chat room!

5. If possible talk with your students about the advantages and disadvantages of closed assignments!

UNIT 3: OPEN ASSIGNMENTS

As already announced in the former units, we will now deal with the problem area of open assignments. This problem area contains open and semi-open assignments; generally we will use the term open assignment.

What are open assignments?

Open assignments do not provide the solution and no clear solution is necessary. Meandering is possible at first. The assignment should stimulate for basic considerations and encourage discussions. The solution should require qualitative argumentation and enforce the thinking about the content. Open assignments provide for more than one solution and the solution is not given, there is enough room for own considerations and aims. The learners should be encouraged to find their own solutions, verbalise it and discuss it with the other learners. A possibility for enhancing the active involvement of the learners is the use of open assignments, which provide for own solution and ideas. The term "open" has to be differentiated: Assignments can be called open concerning the concrete working task or project, the process and way of solution, for the solution
 itself etc. by this, the connection between the openness of assignments on the one hand and the self regulation on the other hand is implied: learning assignments have to contain open parts, in which the learner takes over the responsibility for his own learning process. But the assignments and the instruction with their contexts give impulses that structure the learning process more or less. It is valuable that learners get encouraged to act by assignments, but not enough for enhancing self-regulated learning. Valuable in the sense that the success of teaching correlates with the active learning time of the learners. Instruction which is primarily organised along assignments or on sequences of assignments-solution can increase the learning time. Not enough is to act in that sense that, depending on the assignment occurs with a different extent on self-regulation.

If one views assignments from the perspective of self-regulated learning, the question arises what kind of possibilities the assignments provide for the learner to regulate their process of finding a solution and therefore to regulate their learning process and how the opportunities for self-regulation are balanced with external regulation.

### Open assignments can be classified as follows:

- **Open design assignment**
  The assignment contains a topic, a problem or a material that should be designed/organised narrative, sculptural or playful.

- **Open interpretation assignment**
  The assignment contains complex information with manifold meanings, situations or problems, which should be interpreted.

- **Free association assignments**
  The assignment contains parts or connected fragment or closed information. They have the effect of initiating a personal reaction. Of didactical importance are these free associations which contain terms, sentences, stories, characteristics or visualised situations.

### Semi-open assignments can be classified as follows:

- **Open answer assignments**
  After a question or an impulse an answer should be given. This can occur according to the impulse with an answer, with more than one answer, with a collective answer or with a complex answer.

- **Association assignments**
  The assignment contains impulses where elements should be associated that have to be formulated by the learner. This can happen analogue for the above mentioned answer forms according to the impulse.

- **Supplement assignments**
  The assignments contains incomplete information, the gaps should be filled in with formulated information. This can happen analogue for the above mentioned answer forms according to the impulse.
✓ **Substitution assignments**  
The assignment contains elements which should be substituted by formulated elements. This can happen analogue for the above mentioned answer forms according to the impulse.

✓ **Composition assignments**  
From given elements information should be composed. According to the impulse this can happen in form associations, supplement, a substitution or a reduction.

✓ **Restructure assignments**  
The assignment contains information which should be restructured. Elements should be changed according to their information. This can occur by restructuring, associative restructuring, a supplement restructuring a substitution restructuring or by a realignment according to the impulse.

The following checklists names the criteria for open assignments

**Characteristics of open assignments:**

✓ There are several solutions. What kind of solution process is to be followed is not clear at first.

✓ The problem situation has to be described first.

✓ Acts are requested.

✓ An unclear posed problem provides for different, competing approaches.

✓ The solution requires the integration of knowledge from different areas; if necessary the knowledge has to be expanded

**The use and the advantage for learner:**

✓ Learners have a frustration tolerance for problems where there does not fit a suited solution at first.

✓ They train a tolerant and reflective handling of failures.

✓ There is enough free space in the syllabus: the dissociation of the narrow purpose of the assignments makes divergent work possible. Learners will notice very quickly when their ideas are assessed only according to usefulness for the topic of the lesson.

✓ There is time space; only a dissociation of the narrow time space of the lesson allows for the waiting of solutions, discuss them in more detail, give ideas back to the group for further development, present alternative solutions etc. This can only work when there must be room in the same lesson fort he discussion of homework or a result has to be taken down on the black board or exercises have to be worked on.

✓ The learner has the ability to refer, an ability which allows him to work with connected knowledge. This contains the activation of previous knowledge for example by looking up old notes or the use of other sources (school books, the World Wide Web).
The communication of the group is reciprocal and effective. This kind of communication culture contains for example that the learners are able to present their own ideas, to receive a feedback and make sure that they are understood by the others.

**How to open an assignment?**

- Accepting more than one solution
- Put assignments outside the actual context, so that it is not clear that just learned methods have to be applied
- Discuss and value alternative solution in the lesson
- Leave out starting information
- Let the learners discuss what kind of information is necessary and useful
- Do not provide necessary data; let them estimate it by using their everyday experience.
- The effect of leaving out can also be reached by using the opposite. Give an abundance of information which has to be selected and structured
- Leave out information about the aim
- Leave out or thin out the working assignment/the project
- Give divergent assignments (Try out, what you like*)

**Tasks**

1. Develop for the 5 of the 9 open and semi-open assignments:
   - Open design assessments
   - Open interpretation assignments
   - Free association assignments
   - Free answer assignments
   - Association assignments
   - Supplement assignments
   - Substitution assignments
   - Composition assignments
   - Restructure assignments

   A learning assignment as well as an answer structure (a solution resp. a solution structure) relevant for your subject or vocational subject!

2. Test your developed open assignment in your class!
3. Compare the results of the test with your considerations made before!
4. Discuss
   
   a. your developed open learning assignments as well as the answer structure and
   
   b. the results of the test

   with your colleagues, your experienced teaching consultant and in the chat room!

5. If possible, talk with your students about the advantages and disadvantages of open assignments!

**UNIT 4: WORKING WITH GUIDANCE SCRIPTS AS AN INSTRUMENT FOR OPEN ASSIGNMENTS**

To structure learning and working assignments and to regulate the acts of the learners one has to use suitable methods and instruments to organise learning and working assignments. A suitable instrument is the guidance script.

**Introduction to the guidance script concept**

In its original form the work with guidance scripts was developed by practitioners in vocational training. Although this concept has a theoretical conception and especially the advancement of this instrument is based on a theoretical framework. For organising vocational training science has given little input. This has to stay in the hands of the practitioners. But the pre-conditions and the effect of the guidance script concept are one on the best validated teaching and learning strategies within vocational education.

What are guidance scripts?

<table>
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<th>Introduction</th>
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**What are guidance scripts?**

- Materials which help the learner to acquire the necessary knowledge to work professionally in a mostly autonomous way
- They structure the learning and working process
- The complete act provides the basic structure

**Objectives and guidance script concept**

- Knowledge is imparted act oriented
- Theory and practical training have a strong connection
- The learning process is adjusted to the individual learning level of the learner
- Team oriented working
- Enhancing the autonomous development of the learner
What are guidance scripts?

Guidance scripts are material and documents which structure the learning and working process and help the learner to acquire mostly autonomous the necessary knowledge to work professionally. They are a suitable instrument for regulating the teaching and learning process on an act orientated basis (see unit 1). Learning with guidance scripts can be characterised in that the learners acquire the necessary knowledge autonomously by using existing media or stimulated be guidance questions. They plan the execution of the work on their own, or partly supported by a planning concept or other aids. New skills are exercise on so called learning and exercising aids, where they can decide about the extent of the exercise. The learners assess the process and the results of their work on their own and then discuss their assessment with a teacher in a professional conversation.

The objectives of the guidance script concept are that knowledge should be imparted act orientated, where there is a connection of theoretical and practical training. The learning process is adjusted to the individual learning level of the learner and the learners have to work autonomously and team orientated as well as develop criteria for the assessment of their work and use them.

Functions and components of a guidance script

A teacher has to pose himself the question on how to instruct the learner for orientation, judging, planning, decision and assessing.

Guidance scripts give orientation by introducing the training part and explain the "rules" (Judging). They guide the acquisition of knowledge and the planning of the work by using central questions and impulses and give hints with which media to work out the knowledge and provide information. (Judging, Planning, Decision) Furthermore, they give instructions for self-evaluation and external evaluation of the achieved work. (Assessing)

The four components of a guidance script:

Structuring elements of a guidance script

<table>
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<tr>
<th>Structuring Elements of a Guidance Script</th>
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<tbody>
<tr>
<td>1. Central Questions</td>
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<tr>
<td>2. Work Plan</td>
</tr>
<tr>
<td>3. Control sheet</td>
</tr>
<tr>
<td>4. Guidance sentence</td>
</tr>
</tbody>
</table>
1. **Central questions (central elements)**
   Guide the learner to acquire purposefully information on the working objective and the learning contents. (Structure the acquisition of knowledge) Normally they have to be answered in written form and give the teacher indications about the learning level and possible difficulties. (Didactical requests)

2. **Work Plan**
   Is develop autonomously by the learners and discussed with the teacher (professional conversation). (Gives planning support)

3. **Control sheet**
   Contains the important quality criteria of the working assignment and indications for observation and learning assessment, it can be developed by the learners. (Supports the self-evaluation and external-evaluation). In each case it is implemented by the learner.

4. **Guidance Sentence**
   It contains all necessary information/media that the learners need for the problem respectively assignment solution. (Description of the assignment, indications about learning objectives) (Orientation) The complexity of the guidance sentence depends on the complexity of the assignment, the extent of new knowledge for the learners and at last from their abilities to acquire new information autonomously. With the development of the documents the teacher is relieved from repetitive knowledge instruction and can concentrate on the individual learning advancements and learning difficulties of the learners.

The first unit explained the complete act, which is the basis for the practical process of the training with guidance scripts. Now, the practical steps will be explained.

**The guidance script is structured into six steps:**

Guidance Scripts

1. **Information**
   In this introduction phase central questions are used which inform the learner about what should be done, what is the task. By a systematic analysis of the
project/assignment documents and diagrams the learner should be able to grasp the working assignment respectively the problem that is posed. This introduction phase concentrates on the working out of basic knowledge, the consolidation and connection of already acquired skills. The information phase serves to get a picture of the objective. Objectifications should not be used. (because the learner is relieved from the work for example to develop a picture from the end product out of an abstract drawing). The information can also be used to get acquainted with certain kinds of machines or plants on the site.

2. Planning
This phase centres on the decision and organisation of the working processes into a work plan. Generally, the work plan is organised in a learning group. The learners should work out the way from the objective of the assignment. For that intensive "probationary"acting is necessary. (this poses a difficulty for the learners because they have no professional working experience). Enhanced is the imagination as well as the organisation/systematisation of processes. This focuses not on the single working step but on the exercising of planned behaviour in general (future demands of the employee). By discussing the work plan with other learners in the team the use of professional term is exercised. The writing down of the work process should occur on a pin board with file cards. The cards can be reorganised and everyone can comprehend the planning process. (expensive solution is the work on the computer ? this requires a computer workplace for every team member). It is always recommended to let the learners plan the needed tools and aids as well as the necessary time. (as specification ? an according sheet). In cooperative assignments the division of the work has also to be planned. In changing working assignments an assessment sheet has to be developed. (Finding of adequate evaluation criteria and assessment criteria for the assignment).

3. Decision
On this level the possible solution process is decided and the used aids. The work out decision documents are discussed with the teacher. This is done by a professional conversation between the learner and the teacher. The teacher can assess whether the learner has all the necessary professional knowledge for the solution of the assignment. But it is necessary to remind oneself that this kind of conversation is not an exam situation but an instruction for autonomous learning. This professional conversation serves not only for an interrogation of the acquired professional knowledge but also to discuss the practical work and the required professional pre-conditions. If the learners are not able to answer the central question because of missing previous knowledge or missing knowledge about the connections, the teacher should fill in these gaps. If these gaps are large the learner has to choose as an alternative additional teaching or further instructions. A thorough conversation contains all central question are discussed and all learners of the team are involved. For complicated assignments intermediate controls can be arranged.

4. Execution
In this phase the work on the project occurs or the product is produced. The producing process should occur as far as possible autonomously by the learner and can be divided among the team members. Whereas the theoretical preparation of the work is done within the team, the execution should centre on the execution of every skill that is requested by the objective. If a division of the work is needed than it should be paid attention to that everyone acts out a skill,
which he does not already master. If adjustments of the work plan are necessary they should be written down and discussed in the evaluation conversation.

5. **Control**
   The professional production is done by using a control sheet by the learners (self-evaluation) and by the teacher (external evaluation). Generally, the learners should control themselves, which means they have to give account on their work success. From the point of the learning theory the control correspond the information. The written self-control should be carried out along with the work process. The learner needs a feedback whether he is able to do the single operations and not about how the end results should look like. For control a subject reference target in the form of points should be constituted individually.

6. **Evaluation/Assessment**
   The control is the basis for the assessment conversation with the teacher about the done work. Reasons for failures and adjustments are determined and discussed. The evaluation should centre on drawing consequences out of the control result. Especially the learner needs help on how to avoid mistakes in the future. Objective of this phase is not only to correct mistakes but also to help the learner in searching for the reasons as a general behaviour. Therefore, it is important that the teacher does not detect the failure but that he supports the learner to find the failure on his own. With the naming of a reason for the failure behaviour should be enhanced that is called a hypothesis testing behaviour. This behaviour is for example a necessary pre-condition for a successful fault diagnostics within the maintenance area or programming. The learner should conclude from a certain dysfunction to a failure cause and follow this hypothesis by aimed testing. Another important task of the assessment conversation is to discuss the divergences between self-evaluation and external evaluation.

**Tasks**

1. What kinds of functions have guidance scripts?
2. Follow the six practical steps of a guidance script and explain them!
3. Explain in detail what is important in the step of evaluation/assessment! What is the function of control and assessment (steps 5 and 6) and how is it done?
4. Prove the possibilities of the development and the use of guidance scripts for your location! Discuss the problem with your colleagues and your experienced teaching consultant!

**UNIT 5: ORGANISATION AND ASSESSMENT OF LEARNING AND WORKING ASSIGNMENTS, ESPECIALLY OF GUIDANCE SCRIPTS**

The useful application of guidance scripts requires a changed teaching and learning organisation.
Alteration of the teaching and learning system

- Alter learning contents
- Plan learning objectives into the assignment
- Impart act competency
- Remove learning restraints
- Alter the achievement assessment for teachers
- Increase the flexibility of training
- Balance the different previous knowledge
- Provide flexible learning time
- Consider the constitution of teams and groups
- Accept different learning types
- Learning and its assessment

This encompasses the development of learning assignments, the provision of learning occasions, the provision of learning chances and the support of learning. Learning objectives have to be planned into the assignments as learning content. The assignments should be deduced from professional vocational demands. Another pre-condition is that learning restraints have to be removed and learning is motivated. Restrains could be not enough challenge for the learners, assessment and working demands where there is no learning value recognizable. Not to forget the achievement assessment by the teacher has to change. The vocational training has to be organised concerning time and content in a flexible way. The difference of the learners concerning previous knowledge, learning pace and learning type has to be respected.

Different previous knowledge can be equalised by general training courses and/or remedial instruction, that means individual gaps (only possible with individuals or homogenous groups) can be equalised. By using objective orientated learning, that means that every learner can learn until he is able to cope with the given objective, this can be avoided. Different learning types have to be respected, too. The ability to acquire information depends very much on how this information is presented. Learning processes are also influenced by the personal relationship between the learners. Individual perspectives influence the learning process also.

Learning and its assessment - Giving marks:

Allocating marks has two aims: feedback for the learner and a differentiation among the learners. Feedback is necessary - an assessment with marks should be abstained from. An evaluation (professional conversation) has the aim that the reached level of training is known and that the used abilities have an importance in the training syllabus. A Teacher will need this information for the further planning of the training.

Realisation of important learning principles

- Learning through feedback
- Learning through internal questioning
- Learning through communication
- Cognitive probational acting
- Enhancing of self-confidence and success expectations
- Enhancing of the decision and disposition ability
✓ Learning through feedback can be characterised by several feedback processes and the step by step realisation of the objective. Imagined work planning and executed working steps have to be compared. This process is supported by a written work plan, the result control is realised by control sheets and professional conversations.

✓ Learning through internal questioning. It is instructed externally by using the central questions, indirectly it is demanded by the necessity of the written work plan.

✓ Learning through communication. Within the working teams all answers and planning steps are discussed, the written answer form increases the learning effect.

✓ Cognitive probationary acting. The learner is not able to have access to already established acts; therefore, there are immense demands on the cognitive probationary acting. This requires also the ability for abstract thinking as well as for the thinking of functional connections.

✓ The advancement of self-assurance and success expectations. The more precisely the objective and the demands on quality are the better is the learner able to assess himself. This supports the advancement of self-confidence in the own achievement ability.

✓ The advancement of the ability to decide and the disposition ability can be characterised by the preparation and making of decisions [e.g. fault clearance on a machine] and the assessment of the own decisions and acts.

The organisation/development of guidance scripts:

Two problems have to be solved when developing guidance scripts:

1. How can I motivate the learner to become active?

2. In what kind of act reference should the new acquired knowledge be organised in?

The learner should be activated to acquire knowledge autonomously, to plan and act, without given solutions or solution way. The centre questions should provide the possibility to refer back to individual knowledge structures without anticipating the answer in a suggestive way.

Inductive or Deductive?

In general, humans learn inductive, that means from the specified to the general. The learners need a concrete picture to comprehend the general. He needs the special. Especially effective for learning it proves to be to let the learner search for basic laws on his own. In vocational education this is only limited possible, because of time and professional knowledge is established through experience. The guidance script method uses this learning theoretical knowledge by instructing the learner to start from
specialised assignments to work out the general rules and laws. (Text books and teaching that is orientated on this kind of books follows the opposite way)

**Completeness and Complexity:**

The amount that a human being is able to learn in a certain time is restricted. This limited amount can also be forgotten, if it is not repeated and reinforced. In the learning with guidance scripts complex content is divided into several exercising tasks. It makes sense to start with the activity in its most simple form and expands it with more complex activities. It is important that the distribution of the activity parts on different exercise tasks or projects is done systematically. (Tree structure)

**First Acquisition or Reinforcement?**:

Depending on these considerations guidance scripts have different functions. In the case of the first acquisition it is important to let the learners work out the necessary knowledge. The guidance script takes the place of the instruction by the teacher. In the reinforcement of already learned acts the emphasis is on the connection of different abilities to complex working processes. Of importance is here the analysis of the assignment, the reading of drawings and the work plan. Guidance for the last named cases requires that the single skills have already been learned. Knowledge could be repeated and gaps filled.

**Guidance scripts should be act oriented. This implies two facts:**

- It should instruct for thinking through a work that should be executed.
- At the same time, it should regulate the acquisition of new knowledge, which is necessary for the execution of the working assignment.

Therefore, two levels have to be considered regarding the acts of the learner when developing a guidance script: one the one hand the level of the execution of the working acts, the necessary skills, and on the other hand the level of the acquisition of information. Such a limitation on the professional acts requires the planning of the subject systematic content distribution into the working assignment before hand.

**Developing a guidance script the following questions should be asked:**

- What kind of complexes should the guidance script have?
- What kind of functions do these complexes have?
- With what kind of working steps are the guidance scripts to develop?
- What kind of principles and rules have to be considered in the organising of a guidance script?
**Assistance for the development of a guidance script**

- What kind of complexes should the guidance script have?
- What kind of functions do these complexes have?
- With what kind of working steps are the guidance scripts developed?
- What kind of principles and rules have to be considered in the organisation of a guidance script?
- PRINCIPLES and RULES
  - Illustrativeness and comprehensibility in the text organisation
  - Known terms
  - Well defined and correct (but not too easy) questions
  - Consider the level of the learners

Principles and rules as illustrativeness (subjective? for the learner visual and comprehensible) and comprehensibility (subjective? extent of difficulty, but capable for the learner, objectives for the act) in the text organisation, the use of known terms, the use of well-defined and correct but not too easy questions have to be considered.

**Steps for the development of guidance scripts:**

**a) Selection of the assignment type**

- ✔ Fitting content
- ✔ Practical relevance
- ✔ Consider the complexity
- ✔ Consider the level of the learners

**Taxonomy of act patterns:**

As a teacher you have to ask yourself, whether the learner should:

- ✔ Comprehend (imitate) the act pattern
- ✔ Modify (use in an alternate way) the act pattern
- ✔ Select (there are different alternatives? deciding) of the act pattern
- ✔ Combination (connect several elements) of the act pattern
- ✔ Develop (problem solution) of an act pattern
Develop central questions

<table>
<thead>
<tr>
<th>ACTS</th>
<th>KNOWLEDGE</th>
<th>INFORMATION</th>
<th>CENTRAL QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- to act</td>
<td>- Subject knowledge</td>
<td>- Lecture books</td>
<td>- Questions</td>
</tr>
<tr>
<td>- to think</td>
<td>- Rules</td>
<td>- Handbooks</td>
<td>- Explanations</td>
</tr>
<tr>
<td>- to notice</td>
<td>- Basic law</td>
<td>- Table books</td>
<td>- Differentiations</td>
</tr>
<tr>
<td>- to decide</td>
<td>- Instructions</td>
<td>- Operational manuals</td>
<td>- Application terms</td>
</tr>
<tr>
<td></td>
<td>- Laws</td>
<td>- Technical documents</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Mental pictures</td>
<td>- Drawings, Circuit diagrams</td>
<td></td>
</tr>
</tbody>
</table>

Development of assignments
To acquire knowledge that is necessary
Information base
The central question guide

The central questions give the guideline to work out the necessary knowledge from the given information to work professionally on the solution of the assignment.

b) Develop central questions

1. acts that the learners collect and differentiate
2. list knowledge, which is necessary for the assignment
3. collect information sources
4. formulate central questions ➡️ use of direct and indirect didactical requests

<table>
<thead>
<tr>
<th>Area of learning objectives and didactical requests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
</tr>
<tr>
<td>Cognitive acts</td>
</tr>
<tr>
<td>Affective acts</td>
</tr>
<tr>
<td>Psychomotor acts</td>
</tr>
</tbody>
</table>
c) Formulate a guiding sentence

1. Description of the assignment
2. Formulation of the objective
3. Description of the subject connection
4. Indications to the rules for working on the assignment
5. Indications on further sources

d) Complete the guidance script with further documents

1. Information documents
2. Planning aids
3. Control sheet

Tasks

1. Please critically consider your last development of an assignment and the corresponding assessment situations.
2. Choose a problem area of your subject/vocational subject and develop a complex learning and working assignment! Keep in mind the complete act!
3. Use as an instrument the guidance script. Work thoroughly through the several development steps. Consider the objectives of the learning and working assignment as well as the target group!
4. Think about the assessment of the learning and working assignment beforehand. Consider the divergence between self-evaluation and external evaluation!
5. Discuss the learning and working assignments and the considerations for the assessment critically in the chat room and with your teaching fellows. If necessary ask your experienced teaching consultation for advice!

Note:

If you have completed all units of the module, you can go ahead to the next modules. If you have not completed all units of the module, you are recommended to complete those missing units first before going ahead.
MODULE 9:
Design of evaluation documents

<table>
<thead>
<tr>
<th>Nº</th>
<th>Name of Unit</th>
<th>Tests</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit 1</td>
<td>Achievement assessment in teaching</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Unit 2</td>
<td>Function and objectives of achievement assessment</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit 3</td>
<td>Requirements and conditions for achievement assessment</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit 4</td>
<td>Objectives for assessment in class</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Unit 5</td>
<td>Marks, reports and marking system</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit 6</td>
<td>Measures for the objectivciation of a learning assessment</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit 7</td>
<td>Approaches for co-operative assessment especially in the work on and with projects</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

SPECIFIC OBJECTIVES OF MODULE
In module 9: "Design evaluation documents" you will learn:

✓ About general information on achievement assessment by the teacher in teaching
✓ About the coherence between the expectations of a teacher, the achievements of the learners and the diagnostic judgment of the teacher
✓ About the functions and objectives of achievement assessment
✓ About the requirements and conditions for achievement assessment especially the use of a reference system
✓ How to apply different didactical requests
✓ About the different kinds of achievement assessment
✓ About marks, certificates marking system
✓ To develop empathy for quality criteria and subjective fairness
✓ About applying the process of finding marks for a report
✓ About different approaches for cooperative assessment
✓ To understand the inconsistency of the achievement assessment in working on and with projects

PURPOSE OF MODULE
Input:

✓ Principles on good questioning (rules for the development of questions)
✓ Classification of didactical requests according to standards (kinds of questions)
✓ Principles on applying marking systems
✓ Characteristics of an assessment situation in teaching
✓ List of criteria for cooperative assessment

**Expected outcome:**

✓ Different developed questions/didactical requests
✓ Example for an achievement assessment
✓ Example for an answer structure
✓ Example for a marking system
✓ Example for a country specific criteria list for cooperative assessment

**GRAPHICAL STRUCTURE OF THE MODULE**
GENERAL INFORMATION

Achievement assessment by the teacher

The assessment of achievement is an important part of the work of a teacher. The allocation of marks is regarded as the most typical assessment task of teachers. That this kind of assessment focuses on achievement does not mean that an assessment of other learning criteria, especially affective and emotional elements, is unimportant for the pedagogical work. But the learning objectives and learning results that are in the centre of school practice concentrate primarily on the learning achievement. The judgement of a teacher can be divided into an explicit and implicit judgement. In the explicit judgement the teacher uses adequate data, which were acquired for the purpose of assessment. This could be for example tests, written exams, oral exams or informal tests. A diagnostic judgement is then reached when the gathered information is compared to a norm (that means to a reference system see unit 3). In literature three different reference systems are described: an achievement is good, when

a. It is above the majority of other learner's achievement respectively the average of all learners (social norm),

b. The achievement of the learner has increased regarding former achievements (individual norm) or

c. An objective or criteria has been reached (subject norm).

Other achievement assessments are of an implicit nature and do not only refer to a judgement. In this case the process of finding a judgement is shortened. It has not to be transferred into a communicable statement. Achievements of a learner are registered and intuitively assessed; only so far it is necessary, for example to decide on the further organisation of teaching. The decisions are met during the actual teaching process and have to be met very fast. They are not thoroughly reflected and mostly occur by using thinking routines and with a comparable low extent of conscious attention and control. The assessments are developed by comparing and connecting general expectancies on the achievement of a class or on the achievement of a single learner with actual observations. They are unsystematically, not goal oriented and casually occurs besides the actual teaching. The focus of this module will be on explicit judgements primarily.

MODULE TEST

Which of the following three criteria for achievement assessment through the teacher are correct?

Please choose Answer A, B or C.

<table>
<thead>
<tr>
<th>Answer A</th>
<th>Answer B</th>
<th>Answer C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference systems and standards play no role for achievement assessment</td>
<td>One can differentiate between the explicit and implicit judgments of a</td>
<td>Data is acquired unsystematically or with purpose</td>
</tr>
</tbody>
</table>
UNIT 1: ACHIEVEMENT ASSESSMENT IN TEACHING

Achievement Expectations, teaching and diagnostic judgement

Different factors influence the achievement assessment of teachers. The judgement outside the teaching situation is not always objective and neutral, but is influenced by expectations and attitudes of the teacher. Therefore, the acts of the teacher are influenced and controlled by expectations.

Fig. 2: achievement expectations, teaching and diagnostic judgement
Expectations are ideas about how a situation will develop or what kind of consequences an act will have. Normally they are connected with a high extent of subjective certainty, which increases the reliability of actions. They determine how to act in a certain situation and contribute to the implementation of general pedagogical goals into concrete teaching acts. What kinds of achievements can be expected from a learning group or from a single learner always depends on the actual achievement capacity of the learning group (a class) or on the individual learner. Generally speaking this refers to the composition of the group (class composition). How accurate, flexible and realistic the achievement expectations are and how accurately they reflect the actual conditions depend on the diagnostic competence of the teacher. The diagnostic knowledge depends on the other hand on the composition of the class. It is easier to detect achievement differences in a heterogeneous learning group (class). Additionally general teaching and learning objectives influence the expectations of the teacher. Experienced teachers can be distinguished by showing willingness for impartiality and objectivity. They regard expectations and interpretations as a temporary hypothesis, which have to be questioned and if necessary be adjusted. They feel responsible for the learning achievements of their students. How an individual teaching organisation for the learning group and for the individual learner is designed depends on the one hand on the general achievement level of learners of a certain age-group and the own learning group (class) as well as on the specific teacher expectations. The first determine how easy or difficult the instruction, single learning contents or tasks are, the last determine how the individual should be treated in teaching. The expectations of teachers also influence the achievement situation. That means how for example oral and written exam situations are to be designed. These are then the basis for the judgement of the learner's acts, which they show in concrete exam situations. The perception and observation of the learning achievements by the learners is influenced by the expectations, attitudes and hypothesis of the teacher.

**TASK**
1. Please critically consider your last teaching lessons and the corresponding assessment situations. Reflect how far your diagnostic competence (your judgement about the learners) was influenced by your own expectations and social expectations?

2. Explain the coherence between the expectations of a teacher, the achievements of the learners and the diagnostic judgement of the teacher in the teaching process by using the figure "achievement expectation, teaching and diagnostic judgement". Try to establish a relation to your own attitudes and actions!

3. Discuss the connection critically in the chat room and with your teaching fellows. If necessary ask your experienced teaching consultation for advice!

**UNIT 2: FUNCTIONS AND OBJECTIVES OF ACHIEVEMENT ASSESSMENT**

The assessment and judgement of the achievement level are the common tasks of a teacher, as explained in unit 1. Thereby the assessment of the achievement has to fulfil different functions. On the one hand it provides a feedback for the teacher about his teaching. It gives information on the achievement of pedagogical intensions and therefore on the suitability of his didactical-methodological decisions depending on the fields of conditions for his teaching organisation. Closely connected with the assessment of achievement is the evaluation of study courses and study material. On the other hand, the assessment provides for an orientation of the learners. It gives information on the learning acts and learning progress and has a regulative function regarding the learning acts. A third function of assessment of achievement is to a lesser extent determined by didactical considerations as by social requirements. Assessment of the achievement level should supply comparable data about the qualification of the learners in terms of certificates, school reports, and reviews etc., which are the basis for further career decisions.

The following list contains the different functions of achievement assessment. <H2>achievement of>

- Diagnose of the teaching and learning process to receive a feedback about the teaching process and assessment of the learning acts
- Orientation for the learner concerning his achievements and learning progress/assessment of the learning acts
- Assessment for the realisation of syllabus and teaching models (evaluation)
- Possibility of assessing achievements
- A measurement of qualification for public mediation (e.g. certificates)

In an assessment situation (especially in a verbal or non-verbal expression of a judgement) it has to be clear what the aim of the assessment is and what is measured. These aspects are listed below. The following units will deal with these aspects in more detail.
What is measured in an achievement assessment?

→ Achievement, learning achievement

What is achievement?

✓ Achievement is on the one hand the result of an act and
✓ On the other hand the process how an act result is achieved.

The following consequence is that achievement assessment has to be carried out regarding two aspects:

✓ The static aspect (that is the learning product) and
✓ The dynamic aspect (that is he learning process)

What is assessed?

What is the difference between "judging" and "assessing"?"

Judging: is the estimation of the usefulness of a thing, the practical value, and the practical usability.

Whereas assessing:

✓ Always requires values;
✓ These values are compared and ranked;
✓ Thereby assessing means comparing and judging;
✓ It is to be noticed that comparing requires a standard.

TASK

1. Name four functions of assessment for teaching!
2. Explain the difference between judging and assessing!

UNIT 3: REQUIREMENTS AND CONDITIONS FOR ACHIEVEMENT ASSESSMENT

For assessing achievements the necessary requirements and conditions have to be taken into consideration. This poses the question what kind of necessary traits a learning act needs so that the assessment of the performance is possible. KLEBER, referring to HECKHAUSEN mentions:

Characteristic traits of a situation for evaluation/assessment:

1. The task and thus the result of an act must be objectified
2. in relation to a scale of difficulty and "effort" respectively
3. Feasibility of success or failure of an act
4. Subjective binding standards for evaluation/assessment
5. Dependence ("authorship") of the effort on acts

The subjective binding standards for evaluation/assessment are no attribute of the act but are determined to a great extent by the didactical requests. They form the expectations of the teacher (see unit 1), which function as a standard for the comparison of the achievements during the process of assessment. Added is the choice of the reference system for the assessment, which can be an individual reference system, a group reference system or a criteria system according to the purpose of assessment.

In the general information these reference systems have already been explained. Now, they should be discussed in more detail. Normally the class serves as a reference system for the teacher; he compares the learner's achievements with the achievements of other learners in class (social reference) but to a lesser extent with an absolute standard. For a just and fair judgement a comparison with an objective (as far as possible) criteria, with the objectives of the syllabus has to be provided. A true estimation of the learning achievement is very difficult and only with suitable diagnostic instruments achievable. The general expectation of a successful teacher is that the learners will principally achieve the objectives of the syllabus. For the success of teaching it is not only necessary that the expectations are appropriate, but that they are perceived by the teacher as binding objectives which have to be realised in teaching.

The standard results from the classification of a learner's achievement into a reference system:

a. Individual reference: Assessment in relation to individual capacity (there is no comparison possible (an "A" can be a group average of only a "D".)

b. Social reference/group reference: inter-subjective reference system (same teaching allows for the same achievements.)

c. Criteria reference: the achievements are related to a subject demand, generally to the demands of the instruction ("objective reference system).

**TASK**

Name the five conditions for an individual achievement assessment.

Discuss in written form the coherence between the functions of assessment and the used reference systems. Explain at least three coherences. Discuss them in the chat room, with your experienced teaching consultant and your teaching fellows!

**UNIT 4: OBJECTIVES FOR ASSESSMENT IN CLASS**
The intended pedagogical objectives are personality characteristics, which can be predominantly cognitive, affective or senso-motor. The fewest of these personality characteristics can be directly ascertained, but can only be estimated in their specificity through behaviour respectively the produced achievement.

Achievement assessment in its twofold dimension as result (static) and process (dynamic) requires acts in which an achievement is performed. Normally these acts are released by didactical requests, with which the teacher purposefully initialises activities by the learner. Thereby the didactical requests are determinant for the process of assessment and judgement of learning achievement. They determine the acts of the learner by giving guidelines for the act objective, possible for the methodical procedure and available time and limit the individual degrees of freedom of the acts of the learners in a well directed way.

**What are didactical requests?**

Didactical request are an instrument of the teacher to activate the learners. They initiate learning acts. Didactical requests are important for the realisation of the regulative function and control function of the teacher. They play an important part in every phase of the learning act. They are sentences, and can be differentiated according to didactical considerations into declarative sentences and sentences for didactical requests.

**Didactical request**

![internal model of a learner](image)

- improvement of the internal model

**Sentences for didactical requests**

![internal model of a learner](image)

- acting on a model

One can differentiate between direct, indirect, problem discussing and non-problem discussing didactical requests.

**Kinds of didactical requests**

a. Direct requests

- They contain the verb which formulates the requests for an act. Attention: Meaning respectively comprehensibility of the verb e. g.: to describe, to characterise, to illustrate, to interpret, to explain The following consequence
is that the use of verbs, which request an act, has to be unambiguous and that these verbs have to emphasise a certain area of learning objectives.

b. Indirect requests

- The act which is to be initiated is not named. The question implicitly contains the act.
- The question technique is important.
- There is the possibility of not understanding the question.

Fig. 4: Direct and indirect didactical requests

In structuring an interrogative sentence the meaning of the interrogative pronoun has to be clear. The following list mentions the most important interrogative pronouns:

<table>
<thead>
<tr>
<th>WHO</th>
<th>This pronoun always refers to a person / an individual.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHEN</td>
<td>This pronoun always refers to time / a date.</td>
</tr>
<tr>
<td>HOW LONG</td>
<td>This pronoun always refers to duration.</td>
</tr>
<tr>
<td>WHERE</td>
<td>This pronoun always refers to location.</td>
</tr>
<tr>
<td>HOW MUCH/ MANY</td>
<td>This pronoun always refers to the amount</td>
</tr>
<tr>
<td>WHY/ WHAT FOR</td>
<td>These pronouns always refer to cause or reason.</td>
</tr>
</tbody>
</table>

The following rules should be considered:

- Choose the interrogative pronoun carefully!
- Put the interrogative pronoun at the beginning of the sentence!
- Avoid double questions and chains!
- Formulate short interrogative sentences!
Do not formulate leading questions!
Use questions which require a productive learning achievement!
Pose the question to all learners!
Wait for about 10 sec. after the question to give the learners time to think! (in oral exams)
Await several answers! (in oral exams)

C - Problem discussing and non problem discussing didactical requests

When becomes a task a problem for the learner?
A task becomes then a problem for the learner
When the solution process is unknown to him/her and
When there is only insufficient information available for the task.

Fig. 5: Direct and indirect didactical requests

The two following questions: "Please name...!" and "What...?" clarify once again how the formulation of a questions effects the answer, time involved and assessment.

"Please name...!"
This requires the reproduction of known content.
Furthermore, the didactical request demands a precise formulation.
The time involved for the development of the question and the assessment is not so great.
The assessment of the question is low.

"What...?"
Normally this question allows for the search of things not yet known.
Discursive formulations are allowed.

The time involved for the development of the questions and assessment is higher.

The assessment is higher.

**Example:**

How are transmissions classified and what kind of functions do they have?
Name different kinds of transmissions!
What kind of functions do they have?

Didactical requests can also be classified according to their area of request. By this, cognitive processes respectively cognitive acts, acts aimed on abilities, linguistic acts or acts using learning aids should be initiated. The following list gives an overview on exemplary didactical requests.

**Classification of didactical requests according to areas of requests:**

Requests to initiate:

- Cognitive processes respectively cognitive acts
  "Analyse...!"
  "Prove...!"

- Acts aimed on abilities
  "Measure...!"
  "Draw...!"

- Linguistic acts
  "Explain...!"
  "Describe...!"
  "Illustrate...!"

- Acts using learning aids
  "Work with your working sheet!"
  "Read in the textbook page...!"

To assess a situation different criteria have to be met.

**Criteria of an assessment situation**

- There has to be a didactical request in form of a task, this task has to demand a solution which should not depend on the learner.

- Tasks without a difficulty level do not allow conclusions on the learning achievement.

- The act has to be feasible for the learner.

- The assessment standard has to be clear beforehand. That means the answer structure has to be developed before the assessment.
✓ It has to be clear who accomplished the achievement.

For preparing a learning assessment of learners the character of the acquired for achievement, the content, the form of expression and the function of the assessment have to be clear.

Considerations for preparing a learning assessment

a. Character of the acquired achievement
   Are the acts for the achievement predominantly
   - Reproductive (predominantly repetition)
   - Productive (Application on new facts)
   - Creative (homework, projects)?

b. Content of the learning achievement
   Is the achievement predominantly based on
   - Cognitive qualities (knowledge, abilities)
     - Descriptive knowledge "State/give ..."
     - Applying knowledge "Calculate ..."
     - Analysing knowledge "Classify ..."
     - Synthesising knowledge "Develop ..."
     - Evaluative knowledge "Examine ..."
   - Motor qualities (skills)
     - Please measure ...
     - Please draw/sketch ...
   - Affective qualities (attitudes, opinions, beliefs)?
     - Please consider .../You must consider that .../Would you take into consideration ...?
     - Please take part in ...
     - Please speak up/stand up for ...
     - Please find assessment factors for ...

C. Form of expression of the learner
   - Verbally
   - Written
   - Programmed
   - Performing an activity
D - Functions of achievement assessment

- Orientation
- Activation
- Development of judgement

Achievement can be assessed on different ways, including facial expression, gestures, single word expressions, word judgements and marks.

**Kinds of achievement assessments**

1. Assessment through facial expressions and gestures:
   e. g. agreeing nods, a doubtful facial expression
   **NOTE:** You will get further information in module 11, unit 3 and 8.

2. Assessment through single word expressions:
   e. g. yes/no, good, but, well, well

3. Assessment through word judgements: has the same effect as a mark, because:
   - Mistakes, failures and right answers are assessed
   - Advice for corrections is given
   - Appraisal and reproach are well-balanced

4. Assessment through marks (see unit 5)
   e. g. A = very good, D = satisfactory

**TASK**

1. Formulate in written form three questions from your actual syllabus content for reproductive, productive and creative acts! Try these questions with your learners! Analyse self-critically, whether the formulated questions initiate the expected acts.

2. Develop an (oral or written) learning assessment test in your subject and implement this test. Use an adequate mix of direct and indirect didactical requests. In any case, consider the different characters of acts (reproductive, productive, creative), the content of the learning achievement (cognitive, motor, and affective) and the functions of an achievement test (orientation, activation, development of judgement). Write down your considerations for self-reflection!

3. Critically discuss these three questions, the achievement test and your considerations in the chat room and with your teaching fellows. If necessary ask your experienced teaching consultant!
UNIT 5: MARKS, REPORTS AND MARKING SYSTEM

Many states use a marking system which is based on numerals, generally known as marks. The marking systems have different parameter values. In Germany for example there are marks on a scale from 1 - 6, in Vietnam on a scale from 10 - 1. Although there are different scales, there are some basic principles which have to be considered as a teacher.

According to DOHSE the functions of a mark can be divided into five main functions.

We will deal only with the three most important functions. These are:

1. The orientation and report function,
2. The pedagogical function and
3. The selection, ranking and entitlement function.

It should be clear, that marks and reports have the task to orientate the teacher, but the main function is to give account to the parents (and the public).

The mark is, like already mentioned, a special kind of information for the learner. It gives information on how successful his learning achievements are perceived by the teacher within a certain time. As the mark provides information for the learner and the parents on a certain achievement level, for the teacher it has a more complex function, because he perceives it as a result of his work, too.

The functions of marks and reports have also been in the commission of the state and the public and are therefore to be seen critically. Normally, new demands from the society on the quality of education do not automatically lead to the development, testing and implementation of suitable aids for the assessment, but often one or more new functions will be assigned to the marks.

How important marks and reports are regarding the selection, ranking and entitlement functions has already been discussed. Now, it is important to analyse and critically examine whether a marking system and numeral marks of a country meet the demands. As we already know, different states have different marking systems and we can see that there are parallels between the number of marking grades and the public awareness.
Fig. 5: Achievement assessment in the setting between school and society

It has to be emphasised that marking means in the school/teaching context generally a mere comparison of different learning achievements. Only a more or less of an achievement by the individual is named "The established numeral marks are no basic number", which "are highly relative" in other words, the individual learning achievements can only be ranked into an ordinal scale, because learning capacity is a comparative concept (it is not metric) and achievement is not measurable.

In spite of this critique, marks are the most common form of assessment. These result from the mentioned reasons, which favour a numeral mark for assessment in school:

- A mark is the easiest and most simple way to express the value of an achievement in comparison to others.
- It is very useful for the selection, ranking and entitlement function.
- It is a useful information for notification (e.g. of the parents).

The following figure clarifies the process of determining a mark.

**How does the process of determining a mark work?**
In the centre of this process is the didactical request, which means the task with the achievement characteristics. One has to consider that the learning acts which are initiated by the tasks only present observable behaviour. The teacher develops on the basis of his achievement test an own achievement standard (answer structure). The achievement of the learner is determined (dates are acquired) and the comparison (pedagogical target/actual result) with the standard of the teacher and the observed learning achievement leads to the final judgement and the allocation of a mark.

Process of determining a mark

**TASK**
1. Develop an answer structure for an achievement test in your subject. You can use the developed test in unit 4. Allocate to the single answers in your answer structure percentages and develop on this basis a marking sheet (mark with explanation). If necessary ask your experienced teaching consultant for advice!

2. Let your answer structure (and the achievement test) be discussed. Ask your colleagues (or the participants in the chat room) to develop a marking sheet. Compare your marking sheet with that of the others, regarding:
   a. The conditions of your school system (and the according assessment standards) of your country
   b. The conditions of your school system (and the according assessment standards) of another country.

Where can you find similarities, where differences? Please, draw a conclusion!

UNIT 6: MEASURES FOR THE OBJECTIVICATION OF A LEARNING ASSESSMENT (NEUTRALITY OF PROCEDURE)

This unit should have the purpose to create a kind of empathy for neutrality criteria in assessing learning achievements. Achievement assessments are done by one person/individual, in this case a teacher. Therefore, achievement assessments contain a subjective aspect. As a result, achievement assessments are never objective. The experienced teacher must have the aim to reach an objective assessment. Or in other words, this means "subjective fairness". Different kinds of test can help the teacher to improve his "subjective fairness".

Norm orientated tests can help the teacher to assess the achievements of his learners beyond the own class correctly. School achievement tests which compare the learners with an age- or age-group norm, give the teacher valuable advice how to rank the own class and individual learners in comparison to a complete age or class level.

Goal orientated tests provide indirect information on how far a learner can cope with certain learning objectives. They are based on a subject norm/ subject criteria.

Achievement tests: The achievement capacity of a learner is not only expressed in his actual achieved achievement level but also in the existing development possibilities, the potentially possible achievement level by certain teaching methods or individual support. These tests measure how far learners can profit from teaching respectively support by these aids. A test is done at two different points in time, between these two tests there will be a training unit. It is not important how much the learner achieves in the first or second test, but how efficient he used the support and could thereby improve his achievement.

As we have mentioned at the beginning the subjective assessment of the teacher has to be corrected and completed. A help could be data on the achievement of the learners that is objective, reliable and true as much as possible. Therefore, the quality factors objectivity, reliability and validity will be explained.
Criteria for procedure neutrality in achievement assessment according to the psychological test theory

The purpose of quality factors is to secure the reproduction of object of investigation. The extent to which a procedure is reliable and valid informs about how reliable the gathered information is and how exactly the object of investigation has been reproduced.

1. Objectivity

Objectivity means the independence of the results from the examiner. Objectivity is not secured, because the teacher develops his own achievement standard and uses his standard for assessment.

2. Reliability

Reliability means the reliability of control as a procedure. For example the results should not depend on chance.

3. Validity

Validity means the validity of control regarding the judgment: The question "Is that measured what should be examined? "describes this aspect.

**TASK**

1. Name three quality factors and explain what they mean! Give reasons, why there can be no objectivity in the achievement assessment of a learner by a teacher!

2. Discuss the coherence between the different kinds of tests (norm orientated test, goal orientated tests, achievement tests) and the reference systems (individual reference, social norm/group reference and criteria reference), which were discussed in unit 3!

Critically discuss the coherence in the chat room and with your teaching colleagues. If necessary, ask your experienced teaching consultant for advice!

**UNIT 7: APPROACHES FOR COOPERATIVE ASSESSMENT ESPECIALLY IN THE WORK ON AND WITH PROJECTS**

This last unit should discuss how far the explanations from unit 1 to 6 can be transferred to the assessment of the work on and with projects and what kind of consequences may arise from certain contradictions. Therefore, the characteristic aspects of the work on and with projects which will be relevant for an assessment will be considered.

Criteria for the work on and with projects according to HORTSCH (2002/2003):

1. A project exists.
2. The work in the projects has problem-solving structures.

3. The problem has as a minimum two possible solutions.

4. The work on the project is orientated on the experiences and interests of the learners.

5. The work on the project is characterised by complete acts.

6. The work on the project is organised in bigger or smaller groups or individual work.

7. The work on the project is multidisciplinary.

8. The work on the project uses different instruments and different methods.

9. The work on the project is predominantly characterised by self-organisation and self-responsibility.

10. The result of the product has an objective or subjective utility value.

On the contradiction between self-organization and self-responsibility of learners and the requirements for an individual achievement assessment -

The most frequently mentioned criteria for the work on and with projects is the self-organisation and self-responsibility of the learners. This means, that the learners have a high degree of freedom in all structural elements of their acts, beginning with the aim, to the planning process, the implementation up to the control of their acts. This does not mean that the teacher has no obligation to plan the project goal orientated. But his plan will be more focussed on including options for activities rather then giving strict learning advises. This point has consequences for the assessment of learning achievement. So far, it has been explained that the teacher initialises with didactical requests certain acts, which make certain achievements as indicators for certain personality characteristics determinable and comparable to specific expectations for these acts. Only on this way it is possible to fulfil the named conditions for the individual achievement assessment. When the learners organise their learning acts by themselves, they have the expectations and control to regulate their acts. An exclusive external control and assessment of the achievement by the teacher seems impossible in this situation. KATH has already mentioned that control and assessment of achievements in the work on and with projects is only cooperatively possible between teacher and learner. The learner himself has to present in certain phases of the work his learning acts with objectives, procedure and results and self-critically compare the objectives with the results and therefore provide the basis for the teacher for an assessment. The self-control is a necessary pre-condition for a reasonable achievement assessment by the learner in the work on and with projects.

On the contradiction between cooperative learning organization and securing of individual authorship of achievement -

Another characteristic of control and assessment in the work on and with projects arises from the typical social forms. Learning in the work on and with projects is normally organised in group or team work. Because the learners organise their work on their own it is nearly impossible for the teacher to secure the individual authorship of the
achievement which has to be assessed. He/she can only control and assess group achievements. For an individual achievement assessment there has to be a reciprocal assessment by the learners in the group. Only on this way the individual achievements can be indirectly assessed. Whether this is necessary and useful is determined by the purpose of the control and assessment.

On the contradiction between the pedagogical aim connected with the work in and with projects and control and assessment of the project product -

As a last aspect, a problem should be mentioned with control and assessment in the work on and with projects that is connected to the product orientation of this kind of learning organisation. The existence of a concrete learning and work result tempts to assess the achievement according to the quality of the product. Rather the reflection on the process of problem-solving for producing the product is the more valuable aspect in the control and assessment of the learning achievement in the project work seen from a pedagogical perspective.

Problems of achievement assessment with the work on and with projects

The contradiction between self-organisation and self-responsibility of learners and the requirements for an individual achievement assessment

The contradiction between cooperative learning organisation and securing of individual authorship of achievement

The contradiction between the pedagogical aim connected with the work in and with projects and control and assessment of the project product

The concluding points about the problem of achievement assessment with the work in and with projects are.

1. An exclusive external control and assessment of learning achievement by the teacher is not possible.

2. Control and assessment of learning achievement has to be carried out in cooperation between learner and teacher. Starting point for this is the learners keep a check on himself and the self-assessment by the learner, follows by reciprocal assessment of produced achievement by learners. On this basis, the teacher is able to expound his assessment well-founded.

3. Although project work is characterized by product orientation the focus of control and assessment should be on the quality features of the product but on the process of problem solving.

TASK

1. Please read the following criteria list on cooperative assessment!

2. Discuss the single criteria regarding the work on and with projects. Which criteria can be used and adapted to the conditions in your country?
3. Please adjust this list for cooperative assessment according to your country's specific requirements.

4. Explain why you choose the criteria.

Note: If you have completed all units of the module, you can go ahead to the next modules. If you have not completed all units of the module, you are recommended to complete those missing units first before going ahead.
MODULE 10:
Evaluation and self-evaluation of performance

<table>
<thead>
<tr>
<th>N°</th>
<th>Name of Unit</th>
<th>Tests</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General information</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Unit 1</td>
<td>The nature of teaching analysis</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 2</td>
<td>Criteria for the suitability of the teaching organisation</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 3</td>
<td>Feedback through student behaviour during the teaching process</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 4</td>
<td>Feedback through open questioning using the pin board technique</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 5</td>
<td>Feedback through questionnaires</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 6</td>
<td>Feedback through assessment of learning achievements</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 7</td>
<td>Preparing and conducting sitting ins (teaching observation)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Unit 8</td>
<td>Evaluating sitting ins</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Specific objectives of module

After working on the module "Evaluation and self-evaluation of performance" with the study instructions and attendance of seminars the participant should be able to:

✓ Explain teaching as a complex process which combines anthropogenic and social and cultural pre-conditions as well as didactical decisions
✓ Explain essential criteria for a suitable teaching organisation
✓ Differentiate different methods for the evaluation of teaching and define their application by knowing about their advantages and disadvantages
✓ Receive feedback about the own teaching organisation through observation of student behaviour
✓ Receive feedback about the own teaching organisation through oral questioning of students
✓ Receive feedback about the own teaching organisation by using questionnaires
✓ Interpret the results of achievement assessments for the suitability of the own teaching organisation
✓ Prepare and conduct sitting ins for teaching analysis.

Purpose of module

✓ Emerging of knowledge and insights concerning the suitability of organising teaching processes within vocational education
Module 10/ IST

- Develop knowledge on essential evaluation methods for vocational teaching
- Develop abilities for successful application of these evaluation methods
- Working out instruments (observation protocols, questionnaires, sitting in protocols) for the practical application of evaluation methods

**Graphical structure of the module**
General Information

Analysis and assessment of teaching are essential tasks of a teacher, which fulfil important functions concerning his pedagogical work.

It is in the nature of the goal-oriented acting of the human being that one controls and asses his acts concerning goal achievement as well as the purposefulness of used methods and practices. This applies accordingly to teaching. Without analysis and assessment of teaching which includes the assessment of learning achievement it would not be possible to

- Adjust the teaching process to the actual conditions (adjustment of planning)
- Improve the implementation of teaching and learning processes
- Receive information on learning success as a basis for further didactical planning decisions.

The functions of feedback for the learner will not be discussed at this point, because they will be considered in detail in module 6, control and assessment of learning achievements. Primarily, analysis and assessment of teaching answer the question:

Was the conduct of the teaching and learning processes according to the given conditions and aimed teaching objectives suitable?

As simple and comprehensible this question may be it clarifies a basic problem of teaching analysis and assessment. Teaching and learning processes are aimed at developing personality characteristics of single individuals. Students differ in their pre-conditions in character, physic condition and cognition. Through this, the internal conditions for learning processes are diversified. A variety of external influencing factors exist as well, which have to be accurately assessed and considered concerning the organisation of teaching and learning processes respectively influence the suitability of the teaching design significantly. Therefore, the right or wrong teaching design for achieving certain objectives does not exits, but teaching has to prove its suitability within the given internal and external conditions.

From this derives the consequence that a reasonable evaluation of teaching and learning processes is only possible when the whole set of conditions is taken into consideration.

Therefore, it is necessary to deal with this set of conditions and didactical decisions at first (unit 1), and based on this to develop criteria for a suitable teaching design (unit 2). The following units (3-6) deal with the question, what kind of internal evaluation methods give information on the worked out criteria and how to apply these methods correctly. Beside the evaluation methods which can be applied by the teacher for analysing and assessing the own teaching performance, external evaluation methods play an important role within the pedagogical practice. Therefore, unit 7 and 8 serve for preparation, implementation and evaluation of teaching sitting ins.
# Module Test

## What kinds of functions have analysis and assessment to fulfil?

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>To select the students according to their capacity</td>
</tr>
<tr>
<td>B</td>
<td>To identify the suitability of curricula respectively to contribute to the further development of curricula</td>
</tr>
<tr>
<td>C</td>
<td>To improve the design of teaching and learning processes and gain information as a basis for further didactical planning decisions</td>
</tr>
</tbody>
</table>

## What is analysed and assessed in teaching?

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Only the teacher’s behaviour during teaching</td>
</tr>
<tr>
<td>B</td>
<td>The design of teaching and learning processes regarding the aspect of suitability</td>
</tr>
<tr>
<td>C</td>
<td>Only the student’s behaviour, because it represents the learning achievement</td>
</tr>
</tbody>
</table>

## Where does the problem of teaching evaluation result from?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>From the complexity of the teaching and learning processes including the conditions which have to be considered</td>
</tr>
<tr>
<td>B</td>
<td>From the fact, that teaching is a dynamic process which can hardly be described</td>
</tr>
<tr>
<td>C</td>
<td>There are no suitable methods for teaching evaluation in school practice</td>
</tr>
</tbody>
</table>

---

**UNIT 1: THE NATURE OF TEACHING ANALYSIS AND ASSESSMENT**

Teaching analysis and assessment are essential parts of the pedagogical work. They provide the teacher with feedback about the process and success of teaching and learning processes. This feedback is the basis for:

- Planning adjustments during the actual teaching process
- Didactically planning decisions for the following teaching units
- The further advancement of the organisation of teaching and learning processes.
The problem of a purposeful assessment of teaching lies in the complexity of teaching and learning processes. An assessment of the suitability of teaching organisation is only possible when the whole set of conditions of internal and external factors which influence teaching and learning processes, is taken into consideration. HEIMANN developed in his "lerntheoretisch" approach a simplified model for planning and analysing teaching, which illustrates the coherence. Fields of conditions, factors which influence the teaching process are therefore

- Anthropogenic pre-conditions (all internal pre-conditions of learners and teachers also)
- Social and cultural pre-conditions all external pre-conditions as size of learning group, social composition of the group, institutional conditions (e.g. equipment etc.)

The teaching planning has to start from these fields of conditions. In the teaching analysis and assessment should be examined whether the teaching conduct satisfied the existing conditions.
The teaching organisation is characterised by the fields of decisions, which are these elements of teaching that are shaped by the teacher:
Module 10/ IST

✓ Intensions (pedagogical intension)
✓ Content (content of teaching)
✓ Methodology (the entirety of didactical and methodological elements of teaching)
✓ Media (selection of appropriate teaching and learning aids)

All didactical decisions have to be organised along the existing conditions. Furthermore, the connections between the fields of decisions have to be considered and consistently organised.

For example, the methodological has the organisation of teaching correspond to the aims and content and media has to be selected according to the methodological organisation.

Beside the analysis and assessment of these coherences, the practical realisation of the didactical principles within the teaching process plays an important part for teaching analysis and teaching assessment.

The focus lies particularly on the principle of methodology and systematolgy, activity and autonomy as well as illustration and comprehensibility.

TASK

Please describe for a chosen teaching lesson:

✓ The teaching objective
✓ The teaching content
✓ The teaching organisation and methodological procedure
✓ The used teaching aids
✓ The factual pre-conditions of the learners concerning the content
✓ The situation in class (student number, capacity, motivation)
✓ The quality and quantity of space!

UNIT 2: CRITERIA FOR THE SUITABILITY OF THE TEACHING ORGANISATION

Analysis and assessment of teaching are predominantly based on the question of the suitability of the organisation of teaching and learning processes. We have already discussed, that the suitability of the didactical organisation of teaching processes should always be seen in relation to the teaching conditions. Teaching and learning processes are aimed at a methodical development of personality characters (knowledge, abilities, skills etc.) of the learners. It is well-established by the psychology of learning and developmental psychology that these development processes will only take place when the learner is able to deal actively and purposefully with objects of acquisition. Therefore, learning can be described as a subjective process of every single individual.
That is why the pre-conditions of the learner, their previous knowledge, their abilities and skills and their attitudes play an important part for the organisation of teaching and puts them in the centre for analysis and assessment of teaching as well.

According to BECKER a modern didactics based on act theory is characterised by a human, democratic and effective organisation of teaching and learning processes as much as possible. From these central criteria he develops the following guidelines for planning and assessing of teaching:

**Human**

✓ To consider the learning pre-conditions  
✓ To accommodate to the individual interest and needs  
✓ To accommodate to the level of language  
✓ To allow for the different learning tempos  
✓ To give individual learning aids  
✓ To take measures for differentiation  
✓ Individual assessment of learning achievements

**Democratic**

✓ To talk about teaching  
✓ To consider suggestions for the process organisation  
✓ To ensure a constructive interaction  
✓ Changing the learning arrangements  
✓ To advance the interaction between the students  
✓ To aim at social learning objectives  
✓ Whenever possible manage conflicts together

**Effective**

✓ Realisation of the teaching plan  
✓ Follow an adequate teaching conception  
✓ Consider or change the basic conditions  
✓ Present the content objectively and differentiated  
✓ Pay attention to comprehensibility  
✓ Aim at demanding objectives also  
✓ Structure the process  
✓ Actualise needed previous knowledge
✓ Provide learning stimulations
✓ Activate the students
✓ Illustrate the process
✓ Optimise the use of media
✓ Organise the process fluently
✓ Carry out achievement assessments
✓ Seize suggestions of the students
✓ Diverge from the planning concept


An overview on the aspects and criteria for analysis and assessment of teaching gives the following table (the list is not exhaustive):

<table>
<thead>
<tr>
<th>Aspect of Analysis</th>
<th>Component</th>
<th>Assessment criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective determination for teaching</td>
<td></td>
<td>Reference to the syllabus concerning objectives and content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reference to the vocational practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reference to the interest of the learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accessibility of the objectives concerning the pre-conditions of the learners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching structure</th>
<th>Orientation Phase</th>
<th>First working out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Account for the interests of the learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarification about the learning objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adequate reactivation of previous knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suitable structure of acts respectively steps of thinking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Logical sequence of contents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adequate feedback to previous knowledge</td>
</tr>
</tbody>
</table>
| Consolidation | Practical reference of application tasks  
Possibilities for feedback for the learners while practicing  
Systematisation of new acquired contents |
|--------------|------------------------------------------------------------------------------------|
| Control      | Sufficient feedback possibilities for the achievement of objectives  
Fair assessment with adequate standards  
Considering individuality in assessment |
| **Teaching Organisation** |  |
| Teaching Organisation |  |
| Forms of activity | Adequate forms of activity  
(teacher talk, teaching conversation, student presentation, autonomous student activity)  
Alternating the forms of activity  
Suitable structural and linguistic organisation of forms of activity |
| Social Forms of learning | Adequateness of social forms  
(frontal learning, group learning, partner work, single work)  
Alternating of social forms  
Considering the development of social components of personality |
| **Didactical Principles** |  |
| Didactical Principles |  |
| Methodology and Systematology | Suitability of plan of distribution  
Systematology of content |
<table>
<thead>
<tr>
<th>Organisation</th>
<th></th>
</tr>
</thead>
</table>
| **Activity and Autonomy** | Relevance of learning acts of the students  
Enhancing autonomy and personal responsibility |
| **Comprehensibility** | Adequate level of learning acts without overtaxing or not challenging the student  
Purposeful simplification of content |
| **Illustration** | Using different kinds of possibilities for illustration (panel, model, pictures, video, practical examples)  
Suitable design of media (slides, work sheets)  
Adequate work with the textbook |

As already explained, the aspects of teaching organisation which are to be analysed and assessed have always be considered within connection to the conditions in teaching. Therefore, a purposefully assessment of the suitability of the different elements applied in teaching is in practice only possible by using different methods. The following task will deal with what kinds of methods give feedback about the interesting aspects and criteria of teaching.

**TASK**

Discuss the possibilities and limits of different evaluation methods (self-observation, oral and written interviews, achievement assessments, external observation with sitting ins) concerning the assessment of the suitability of teaching organisation!

**UNIT 3: FEEDBACK THROUGH STUDENT BEHAVIOUR**

Observation and interpretation of learner's behaviour gives the teacher a continuous feedback on the suitability of his realised teaching acts respectively his initiated learning acts during the teaching process. Although facial expressions and gestures of the students as well as their activities during teaching are no precise indicators for special suitability criteria of the organisation of teaching and learning processes, they identify a multiplicity of short comings concerning the planning and organisation of teaching.
At first should be considered what kinds of behavioural characteristics of students allow to draw conclusions on the suitability of teaching organisation:

- Discipline of the learners
- Attention
- Activity - willingness to cooperate
- Adequateness of student’s acts e.g. answers
- Quality of act results
- Verbal and non-verbal expressions as reactions to certain teacher actions

The following explanations are limited to the analysis of faults in the teaching organisation by feedback through student behaviour. The assigned faults for the observations have to be regarded as possibilities.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Observation</th>
<th>Possible Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline</td>
<td>the general discipline is poor</td>
<td>weak leadership behaviour of the teacher</td>
</tr>
<tr>
<td></td>
<td>the learners only partly follow the demands of the teacher</td>
<td>disturbed interpersonal level between teacher and students</td>
</tr>
<tr>
<td></td>
<td>the students deal with other things</td>
<td>teaching is not enough aimed at the acts of the learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>missing or unsuitable teaching structure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no clear orientation on learning acts</td>
</tr>
<tr>
<td>Attention</td>
<td>the learners are inattentive and do not follow the teaching process concentrated</td>
<td>exhaustion of the learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>it was not successful to interest the learners for the teaching content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the teaching organisation is not suitable and therefore not comprehensible for the learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the learners are overtaxed or not enough challenged (problem of comprehensibility)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>teaching pace is too fast or too slow</td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td><strong>Observation</strong></td>
<td><strong>Observation</strong></td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activity</td>
<td>the learners show little willingness to cooperate</td>
<td>it was not successful to interest the learners for the teaching content</td>
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<tr>
<td></td>
<td></td>
<td>lack of practical relevance</td>
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<td></td>
<td></td>
<td>the learners are overtaxed or not enough challenged (problem of</td>
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<td></td>
<td></td>
<td>comprehensibility)</td>
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<td></td>
<td></td>
<td>the objectives of the learning act are not clear for the learners</td>
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<tr>
<td></td>
<td></td>
<td>→ missing or not suitable orientation</td>
</tr>
<tr>
<td>Student Acts</td>
<td>the acts of the students do not correspond with the intended learning act</td>
<td>the didactical requests and act orientations of the teacher are unclear or</td>
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<tr>
<td></td>
<td>- answers and questions of the students to not correspond with the thematic</td>
<td>incorrectly formulated</td>
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<td></td>
<td>course of the lessons</td>
<td>the teaching structure is not suitable and therefore not comprehensible for the</td>
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<tr>
<td></td>
<td></td>
<td>learners</td>
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<tr>
<td>Results of acts</td>
<td>student answers respectively results of learning acts are wrong or incomplete</td>
<td>necessary previous knowledge was not reactivated</td>
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<td></td>
<td></td>
<td>the learning pace is too fast</td>
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<tr>
<td></td>
<td></td>
<td>learners are overtaxed</td>
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<tr>
<td></td>
<td></td>
<td>the teaching methods does not correspond to the pre conditions of the learners</td>
</tr>
<tr>
<td></td>
<td></td>
<td>new content has not been consolidated enough</td>
</tr>
<tr>
<td>Verbal Expressions</td>
<td>e.g. &quot;Once again this....&quot; &quot;I don’t understand it.&quot; &quot;I can’t follow anymore&quot;</td>
<td>monotone teaching organisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>teaching method is not</td>
</tr>
<tr>
<td>Non-verbal Expressions</td>
<td>e.g. gestures implying lack of understanding or resignation</td>
<td>suited, learning pace too fast ..... illustration is not enough considered</td>
</tr>
</tbody>
</table>

**TASK**

Develop an observation sheet for essential criteria of student behaviour, in which you document your observations of student feedback right after your teaching lesson! Test this observation sheet during your teaching and draw conclusions for your organisation of the teaching process!

**UNIT 4: FEEDBACK TROUGH OPEN INTERVIEW USING THE PIN BOARD TECHNIQUE**

Interviewing learners concerning the organisation of teaching whether though an open discussion or with a questionnaire can have positive effects in both respects on teaching and learning processes. By interviews a teacher receives a feedback on how the own teaching affects the learners respectively how they reflect upon it. On the other hand the role of the learners is strengthened by interviews. They obtain the possibility to advance an opinion on the organisation of teaching and learning processes and are actively involved in shaping these processes according to their ideas. In the end the learners should be the centre of the teaching process and therefore an orientation on their ideas, interests and needs is indispensable.

Interviewing learners has also its limits and problems. Learners have of course no insights into didactical coherences concerning the organisation of teaching. As a result they could not assess whether a teaching method was suitable regarding the actual conditions or whether a certain organisational form corresponded to the teaching situation. Students can reflect on teaching only on the basis of their own teaching experience and perceptions. Questions in a discussion or in a questionnaire have to correspond to this fact.
In interviews with students, especially in open discussions a second problem can occur: the teacher-student relationship.

Do the students really dare to criticise the teaching organisation of the teacher? Is the teacher really open for constructive criticism by his students and willing to consider this criticism in his teaching organisation?

These questions should make it clear that an interview of learners with the purpose of teaching analysis and assessment requires a faithful relationship between teacher and learners.

For the implementation of an analysis discussion the following feedback rules are recommended to consider:

**General rules:**

- Each learner gives a feedback
- There is no discussion about a feedback or legitimizing only listening
- Feedback affects the learner as well as the teacher

**Rules for the learners:**

- Describe own perceptions short, sum it up, concrete
- Only address things which are changeable
- Consider whether a feedback for some special points is desired

**Rules for the teacher:**

- How others perceive you may differ from your own self-conception
- Feedback is one possibility to receive additional information about oneself
- Feedback is no appeal for change
- The learner decides how much feedback he is willing to give


For an open analysis discussion general questions concerning teaching organisation should be used which are easily comprehensible for the learner:

- What do you like? / What do you dislike?
- I have a comfortable feeling towards the learning atmosphere in class/ I have an uncomfortable feeling because ....
☑ Especially interesting for me was ...
☑ I could realise the learning act / I could not realise it because,...
☑ For my learning in class I get support from / help by ...
☑ For my learning in class constrains me ...
☑ Teaching would be more comprehensible for me when ...
☑ The used teaching aids were descriptive for me / not descriptive, because...
☑ The learning pace was appropriate for me / not appropriate, because ...
☑ In class I feel not enough challenged / adequately challenged / overtaxed, because ...

Additional Information: Reader M10-5

These question examples offer the learner very open options for answering. This is a crucial advantage of this kind of teaching assessment.

Recommended is a visualisation of student opinions by using a pin board. On this way the questions can be visualised through headlines and the learners write down their opinions on cards and tack them under the corresponding questions. By this, these open questions can be discussed and at the same time the answers can be kept for the own assessment. Students which are inhibited to express their opinion could only write down their opinion and put the cards on the board.
**TASK**

Plan an open interview with your students for questions concerning teaching organisation! Choose the appropriate questions! Implement the interview and visualise the result on a pin board!

**UNIT 5: FEEDBACK THROUGH QUESTIONNAIRES**

A more time-consuming method for analysis and assessment of teaching is the written inquiry by using a questionnaire. The advantage of this method is the anonymity of opinions. Every student can freely express his opinion towards the aspects of teaching that are addressed in the questionnaire without personal ascription. Therefore, subjective inhibitions to criticise the teacher have no effects when using a questionnaire. There are disadvantages in using a questionnaire for feedback. One disadvantage is the already discussed lacking insights in didactical coherences on the side of the learners, so that the learner can only reflect upon his perceptions and feelings. A second disadvantage is the limited answer possibility when using a questionnaire. In contrast to an open analysis discussion a questionnaire often uses questions with statements where the learner can agree or disagree on a determined scale e.g. from 1 to 5.

**Example:**
The relevance of the content for the vocational practice was clearly explained by the teacher.

| 1 | 2 | 3 | 4 | 5 |

1 - totally disagree / 5 - totally agree

By this, very special aspects of teaching organisation can be addressed like in an open discussion, but feedback is restricted to these aspects.

As an example some suitable questions for certain aspects of teaching organisation are mentioned:

**Object orientation**

✓ For me the objects of the teaching were transparent.
✓ The relevance for the vocational practice was clear.

**Teaching structure**

✓ I understood the explanations of the teacher very well.
✓ A systematology of content was transparent.
✓ The exercises were helpful for understanding the contents
✓ The teacher helped us with the exercises.
Organisation of teaching

✓ Teaching is varied.
✓ I was asked to get active.
✓ I had the opportunity to discuss and work out contents with my other schoolmates.

Teaching principles

✓ The teacher can explain difficult facts very good.
✓ The used teaching aids are descriptive for me.
✓ The challenges are not too low or too high.
✓ The teaching style of the teacher is inspiringly.

Additional Information: Reader M10-6

TASK

Develop a questionnaire for teaching assessment and test it for your teaching!

UNIT 6: FEEDBACK THROUGH ASSESSMENT OF LEARNING ACHIEVEMENTS

Another possibility to assess the organisation of teaching is the control and assessment of learning achievements. By this, the result of teachings and learning processes is assessed, the so-called quality of output. Teaching processes provide for the development of certain personality characteristics of the learner. These could only be partly controlled or not controlled at all, but are indirectly expressed in the behaviour of the learner in certain acts. For the assessment of learning achievements it is therefore necessary to place the learner in chosen acting situations (by using appropriate questions or tasks) and assess their acting process and the results (see module 6). These very important control and assessment processes fulfil different functions in teaching:

1. Feedback for the teacher
   The teacher receives a feedback about his organized and initialized learning processes. This enables him to draw conclusions on the suitability of his teaching organization. A differentiated assessment of single aspects of the teaching organization with achievement assessment is only partly possible. At the same time the teacher gains information on the actual level of performance of the learners, which he requires for further planning decisions.

2. Feedback for the students
   The learners need a feedback on the success of their learning acts as well. This provides them with information on the suitability of their learning strategies and
should motivate for further learning activities. Furthermore, control and assessment processes promote the own power of judgement of the learners.

3. Achievement certification
Training courses are certificated by a final document, which inform the society about the education and qualification of the graduates. Basis for this certification is the control and assessment of learning achievements.

4. Research on classroom teaching
For a scientific analysis of the effects of general and specific teaching methodology as well as the suitability of media achievement tests are used. The preparation and evaluation of these scientific tests are to a lesser extent the area of work for teachers

For the context of analysis and assessment of teaching only the first mentioned function should be discussed in detail. An achievement assessment with the aim of analysis and assessment of teaching has to consider the general achievement of the capacity of the learners and their previous efforts. Therefore, an achievement assessment contains a strong individual reference. The point is not to assess objectively the performed learning achievement in relation to the demands of the syllabus, which is done in achievement assessments with the purpose of certification of learning achievements (e.g. with grades). Rather the individual learning advancement of the students has to be controlled and assessed, because only on this way a feedback about the suitability of teaching organisation is possible. For the successful preparation and implementation of achievement assessments for analysis and assessment of teaching some aspects have to be considered:

✓ A clear and for all learners comprehensible formulation of the task
✓ A sufficient connection of the task formulation concerning the teaching
✓ analysis
✓ An adequate standard of the task
✓ A differentiated expectancy structure for different levels of learner's performance (underachievers, average, overachievers)

**TASK**

Develop for an already existing written achievement test a differentiated expectancy structure for the different levels of learner's performance (underachievers, average, and overachievers)! Let the students write the achievement assessment during instruction and use your different expectancy structure for the assessment of each performance! What kinds of consequences do arise for your teaching organisation?
UNIT 7: PREPARATION AND IMPLEMENTATION OF SITTING INS

The external analysis and assessment of teaching through sitting ins plays an important part in the education and further education of pedagogues. Besides, this method functions as a control measure for the school management respectively the school authorities for quality assurance at the schools. The success of sitting ins for the improvement of teaching and learning processes by constructive feedback depends mainly on the person who conducts the sitting in. The person needs broad pedagogical-didactical experiences, the subject knowledge for the instruction as well as communicative prerequisites to conduct an objective and critical but cooperative analysing discussion. Are these prerequisites met, and the teacher’s own willingness for a critical assessment of his teaching exists, he could receive a differentiated feedback on the suitability of his teaching organisation. An essential disadvantage of a sitting in is the interference of the teaching situation by the person who sits in. Students often behave other than normal during sitting in lessons. The attendant guests could lead to inhibitions but also to special motivation. The teacher knows of course, that his actions are in the centre of the analysis and assessment. He will be prepared for teaching above-average and on the other hand be nervous while teaching. Sitting ins do not reflect the normal teaching situation.

According to BECKER the structure of a sitting in is characterised by the following structure of acts:

1. A planning conversation (days before the sitting in)
2. Information about the results of the planning, learning objectives and procedure should be explained (directly before sit in)
3. Teaching, observing and recording
4. Distancing from the actual events
5. Reconstruct the teaching and learning process
6. Emphasise successful units
7. Get to know the intentions of the teacher
8. Analysis of units that have to be criticised
9. Argument student-centred
10. Discuss alternatives
11. Offer hints for the acquisition of skills
12. Give a differentiated feedback
13. assess the teaching achievement


Points 5 - 13 deal with the analysis of the sitting in in the following conversation and will be dealt with in unit 8. Concerning the preparation and implementation of sitting ins the points 1-4 are of importance.
1. Planning conversation

In regard to the planning conversation it is to differentiate whether the sitting in is done for the purpose of teacher education or for the purpose of observing an already working teacher. For a teacher in training the planning conversation is used for the joint development of an organisation of a teaching unit. Starting from an analysis of the fields of content the teaching objectives are defined and considerations concerning the organisation of teaching and the methodological structure are discussed. (See module 5). This planning conversation should not regularise the teacher in his planning intentions but to support him with ideas and recommendations. If an experienced teacher is be observed, the conversation should be used to make the objectives and focus points of the sitting in more transparent. Common aspects of the teaching organisation should be agreed upon, which should be the focus of the sitting in.

2. Information on the planning results

Before the sitting in the teacher has the opportunity to explain and give reasons for his teaching plan in detail. This is necessary for purposeful assessment of teaching, because an excellent and coherent teaching plan can fail on the misjudged pre-conditions of the learners. In addition, an agreement of the person who sits in to the teaching plan could give the teacher the necessary calm for the teaching implementation. This conversation, directly before the lesson, can also have its essential disadvantages. Directly before the lesson the teaching plan can not be changed anymore. The disagreement of the person who sits in to the detailed teaching plan would lead to a not justifiable uncertainty of the teacher. Therefore, it is to consider whether such a conversation is useful and when to abandon it.

3. Teaching, observing and recording

During the teaching process the person who sits in has a passive, only observing function. He/she never interferes in the teaching process. The observing situation during the lesson is very complex, so that a complete coverage of the events is not possible. Therefore, aspects of the teaching organisation have to selected, on which the observer will concentrate. (See unit 2) Besides the selected criteria the observer will notice all theses acts and behaviour of the teacher which may be to criticise. This intensifies with the number of appearances of these behaviours. The observer should aim at an accurate recording of the teaching process as much as possible on the basis of his perceptions. One should not make the mistake to assess the own observations too early and to assign vaguely explanations to critical teaching processes. To reproduce the teaching process in the analysis phase a sit in protocol is to be used. The content of the protocol is defined by the observation aspects, a characteristic of the teaching acts and learning acts for the reproduction of the teaching is indispensable.

4. Distancing from the actual teaching process

Between the sitting in lesson and the analysis a break is recommended. Firstly the teacher has to relieve the tensions of the teaching and needs the opportunity to reflect upon his teaching process. The observer needs some distance from the actual teaching process as well. He/she should read the protocol again and structure the following analysing conversation.
Additional Information: Reader M10-7

**TASK**

Prepare a sitting in at a teaching lesson of one of your colleagues! Develop a suitable sitting in protocol!

**UNIT 8: EVALUATING SITTING INS**

In unit 7 the following phases according to BECKER have already been mentioned:

- Reconstruct the teaching and learning process
- Emphasise successful units
- Get to know the intentions of the teacher
- Analysis of units that have to be criticised
- Argument student-centred
- Discuss alternatives
- Offer hints for the acquisition of skills
- Give a differentiated feedback
- Assess the teaching achievement


Often the analysis conversation starts with a reflection by the teacher. The advantage of such a beginning is that the observer gets to know the teacher's view on the teaching processes and gains more information on the coherences of the teaching process. The disadvantage is that a teacher only reluctantly reflects upon his own teaching in front of others, because one could judge the teaching process too positively or point out mistakes which the observer did not notice.

BECKER points also out that the reconstruction should not centre too much on comparing the teaching plan and the teaching process. Congruency between plan and realisation is no criteria for quality of teaching and variations which arise from the active involvement of the learners can be positively interpreted. In the analysis and evaluation of teaching events as well as typical behaviour characteristics of the teacher the positive aspects should be discussed first.

It is not enough to express only the agreement to certain aspects of organisation. Positive assessments need justifications, too. Negative evaluations of teaching events, behaviour and aspects of organisation have to be justified regarding their insufficient usefulness. It is not enough to explain by criticising how teaching should not be organised.

For the purpose of a useful support for the teacher an alternative for every critical aspects has to be shown, discussed with the teacher and explained concerning the suitability. A general feedback like: "The instruction was already quite good. Keep it up!"
"is not suited for the evaluation of sitting ins and disappoints the teacher. Only by a differentiated and justified evaluation the teacher receives a useful feedback about his teaching organisation and thus important advice how to improve his pedagogical professionalism.

**TASK**
Implement the planned sitting in! Evaluate your observation together with the teacher after the lesson!

**Note:**
If you have completed all units of the module, you can go ahead to the next modules. If you have not completed all units of the module, you are recommended to complete those missing units first before going ahead.
MODULE 11:

Improve teaching skills - Video supported microteaching

<table>
<thead>
<tr>
<th>Nº</th>
<th>Name of Unit</th>
<th>Tests</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General information</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>What is microteaching?</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Videotaping as a tool for teachers</td>
<td></td>
<td>1</td>
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<tr>
<td>3</td>
<td>Verbal and non-verbal behaviour</td>
<td></td>
<td>1</td>
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<tr>
<td>4</td>
<td>Teaching skills</td>
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<td>1</td>
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<td>5</td>
<td>Role-play</td>
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<tr>
<td>6</td>
<td>Hints for proper installation and use of equipment</td>
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<tr>
<td>7</td>
<td>Teacher training in standard situations</td>
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<tr>
<td>8</td>
<td>Evaluation of microteaching</td>
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</tbody>
</table>

SPECIFIC OBJECTIVES OF MODULE

In module 11: "Improve teaching skills - Video supported microteaching" you will learn to:

✓ Explain what is microteaching, what are the objectives and the purpose of it
✓ Use videotaping as a tool for teacher
✓ List criteria for observing a lesson
✓ Analyse verbal and non-verbal behaviour of a teacher
✓ Train several teaching skills for better teaching quality
✓ Apply rules for role-play
✓ Plan the proper installation and use of equipment
✓ Conduct a microteaching lesson as a teacher trainee
✓ Evaluate the microteaching lesson with checklists and discuss it with your teaching fellows and your experienced teaching consultant
✓ Evaluate results/outcomes/assessment of learner performance

PURPOSE OF MODULE

Input:

Hints for proper installation and use of equipment
The procedure of training and examples for conducting and evaluating training situations

**Expected outcome:**

Prepare, conduct and evaluate microteaching in given teaching situations

- Developing teachings skills to prepare, conduct and evaluate training situations (microteaching lessons)
- Learning the principles, purposes, advantages and disadvantages of microteaching
- Working out an example of microteaching lesson and conduct a microteaching lesson
- Evaluate microteaching in given teaching situations

After completing the microteaching module, each teaching fellow will be able to:

- Prepare and apply lesson plans effectively before and during lesson presentation
- Apply the skills taught
- Demonstrate and practice a variety of teaching skills

**GRAPHICAL STRUCTURE OF THE MODULE**

**Apply methodical systems for shop floor work**

- Plan courses on shop floor level
- Apply the project method
- Apply the “I exist” method
- Apply the 4 step method
- Arrange the physical learning environment, design workshop
- Organise workshop safety and install a cleaning and maintenance system
- Introduce students in the working environment
- Select practical learn and work tasks and organise a file system or exercises and related documents
**GENERAL INFORMATION 2/1**

**Something about history**

The method microteaching was developed in the early and mid 1960’s by Dwight Allen and his colleagues at the Stanford Teacher Education Program. The Stanford model emphasised a teach, review and reflect, re-teach approach, using school students as authentic audiences. The model has been adapted for college and university teaching where it has been used most often for graduate teaching fellows. It often offers a concentrated, focused form of peer feedback and discussion.

**GENERAL INFORMATION 2/2**

**Summary of Microteaching**

Microteaching is a training system designed to improve teaching skills of teaching fellows. It is a scaled down version of actual teaching with an experienced teaching consultant in which a teacher trainee teaches a group of other teaching fellows for a time less than the normal lesson time allocated in an actual teaching situation. A microteaching lesson is an opportunity to present a sample "snapshot" of what/how you teach and to get some feedback from other teaching fellows about how it was received. It is a chance to try teaching strategies that you may not use regularly. This is a good, safe time to experiment with something new to you or to get feedback on a technique you have been trying but are not sure about its effectiveness. The core of this microteaching lesson is the presentation of two 5-10 minutes by each teaching fellow. When one teaching fellow presents the lesson as the teaching trainee, the other teaching fellows become the students for that lesson. The experienced teaching consultant is used to keep to the strictly enforced 10 minutes time limit. The goal is to provide an example of a teaching method or style in order to get a fresh perspective on it from your learners. Furthermore, the aim of microteaching is to give the teaching trainee an opportunity to prepare and present lessons (e.g. teacher talk, conversation/discussion or demonstration) in order to apply the skills taught and learned. Microteaching is based on the theory that teaching consists of a number of basic factors or skills such as: communication, explaining, organising, questioning techniques, motivation of learners, problem solving and decision making.

**MODULE TEST**

What are the main criteria for microteaching? Please choose Answer A, B or C.

<table>
<thead>
<tr>
<th>Answer A</th>
<th>Answer B</th>
<th>Answer C</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is a lesson with your students</td>
<td>It takes 5-10 minutes</td>
<td>Feedback from the head teacher</td>
</tr>
<tr>
<td>It takes 7-15 minutes</td>
<td>Help from an experienced teaching consultant</td>
<td>It is a presentation in front of your colleagues</td>
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</tbody>
</table>
Unit 1: What is microteaching?
Microteaching is organised practice teaching. The aim is to give teacher trainees confidence, support, and feedback by letting them try out in front of other teaching fellows a short part of what they plan to do with their students. Microteaching lessons are videotaped for review individually with an experienced teaching consultant.

Why microteaching?
Microteaching is quick, efficient and proven to help teachers get off to a strong start and to improve teaching skills for a better quality.

How to perform microteaching?
Four to seven teachers can participate in a single microteaching lesson. Course head, an experienced teaching consultant, is usually invited to serve as a facilitator. While one teacher trainee takes his or her turn as a teacher, the other teaching fellows play the roles of students. Such a microteaching lesson usually runs for five to ten minutes. When finished, the teacher trainee conducting the class has a moment or two to react to his or her own teaching. The other teaching fellows join in to discuss what they saw that they especially liked. Finally, the group may mention just a few things that the practice teacher might try doing differently in the future.

The videos of these lessons are for the benefit of those taped and will not be seen by anyone else without the explicit permission of the teacher trainee. Microteaching lesson tapes can even be erased immediately if the teacher trainee wishes.

What to prepare for microteaching?
Most experienced teaching consultants provide microteachers with lessons to prepare in advance. If not, think of a few minutes of material that you especially would like to make sure your students understand by the end of your next class. You should not only plan how to treat the subject matter, but also give some thought to how you are going to present yourself, manage the class and involve the students. There are, of course, many different ways of teaching a given lesson well.

The goal is to plan a 5-10 minute lesson, present it to the teaching fellow group, and obtain feedback to improve your presentation and teaching skills. As a result of this lesson, you will have answers to the following questions:

1. How can I best reflect on my teaching?
2. What do I perceive as my strengths?
3. What do the other teaching fellows and the experienced consultant say about my presentation strengths?
4. What suggestions do the other teaching fellows and the experienced consultant have for how my presentation might be improved?
5. How do I give other teacher trainees feedback about their teaching style and presentation techniques?
6. What are some new teaching tips, techniques, and styles that I can use when I teach?

**Advantages**

Microteaching has several advantages, such as:

- It focuses on sharpening and developing specific teaching skills and eliminating errors
- It enables understanding of behaviours important in classroom teaching
- It increases the confidence of the teacher trainee
- It is a vehicle of continuous training applicable at all stages
- Provides a less threatening class environment, and hence no big problem of class control
- It enables projection of model instructional skills
- It enables separate skills to be practised and perfected
- It provides expert supervision and a constructive feedback
- It provides an opportunity for immediate feedback and further practise
- It provides for repeated practice without adverse consequences to the teacher or his students
- Constructive criticism is made by other teaching fellows and the experienced teaching consultant in a good atmosphere
- There is room for practising the skills and making improvement

**Disadvantages**

There are some critics that microteaching:

- Produces homogenised standard robots with set smiles and procedures
- Is a form of play acting in unnatural surroundings (it is no real situation)
- Is feared that the acquired skills may not be internalised
Takes a lot of equipment and technical tools

**Task**
Below you can see different statements, please decide by choosing true or false which statement refers to microteaching!

<table>
<thead>
<tr>
<th></th>
<th>true</th>
<th>false</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Microteaching is efficient to help teachers to improve teaching skills for a better quality.</td>
<td></td>
<td></td>
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<tr>
<td>2. Ten to eighteen teachers can participate in a single microteaching lesson.</td>
<td></td>
<td></td>
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<tr>
<td>3. The aim is to plan a lesson, present it to the teaching fellow group, and obtain feedback to improve your presentation and teaching skills</td>
<td></td>
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<tr>
<td>4. A microteaching lesson usually runs for thirty to forty-five minutes.</td>
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<tr>
<td>5. The videos of these lessons are for all students and teachers in the school.</td>
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**Unit 2: Videotaping as a tool for teachers**

Many teaching fellows videotape their lessons to get a general picture of their teaching style and skills. Others wish to focus on particular problems or aspects of their teaching. Some choose to videotape on the recommendation of their partner teaching fellows.

For many teachers videotaping is a new experiment. For some, videotaping is a requirement; for others, it is something they think they should, but really don't want, to do. Understanding the videotaping process and the philosophy behind it may help many teachers feel more comfortable about having their lessons videotaped. In fact, what emerges from the comments of teachers who have gone through the process is a picture of videotaping as a positive and useful experience and not nearly as dreadful as some have imagined.

The idea behind videotaping is: You are your own observer. So it is a chance for you to observe your own teaching to see how is you are teaching. You they can decide for yourself what you want to work on.

The benefits of taping are many: You can see your teaching in a new way when you are not involved in the moment to moment classroom process. Some teachers are rather apprehensive about appearing before the camera, but later find it a very rewarding and valuable experience. Most teachers find that certain things they were aware of but could
not clearly perceive or handle during the process of teaching stand out boldly on the tape. Examples include students who do not speak during class time, students who dominate and engage in one-on-one dialogues with you, poor use of the board, "lecturing" rather than "discussing", and running out of time. Some teachers have fresh ideas and insights while they observe themselves.

It is strongly recommended that teacher trainees view the videotape of their lesson with an experienced teaching consultant. Without someone else there, teacher trainees tend to focus on the negative aspects of their appearance, mannerisms, and teaching style. Other teaching fellows are very self-critical and the experienced teaching consultant wants them to be sure that they are able to see what they are doing well, as well as the things they should work on. The rooms are equipped with microphones and a video camera located in the room.

The viewing usually lasts one to two hours to provide time both to watch the lesson and to discuss about it. One advantage of participating in microteaching before having your lesson videotaped is that the first shock of seeing yourself on tape has been overcome. Teachers first look at themselves teaching, their attention is first focused on themselves, then on the students, and only later on the interaction between teacher and student. Microteaching offers on the one hand a valuable opportunity for first-time teaching fellows to see themselves looking like a teacher and on the other hand it helps experienced teacher to identify areas for improvement, but also in giving them an honest picture of their teaching performance. The act of teaching leaves little room for objective observation. The experience of watching one's own teaching offers a surprisingly helpful bird's-eye view.

What is involved in a consultation with the experienced teaching consultant and the other teaching fellows?

The experienced teaching consultant and the teaching fellows all have different backgrounds and will have different insights about teaching. All are teachers and mostly have extensive training and experience consulting. To help you see yourself in a positive and constructive way, the experienced teaching consultant expects teacher trainees to view and discuss their tapes with him and the other teaching fellows. Though prepared to discuss any aspect of teaching that you wish, experienced teaching consultants generally focus on mutual observations about the communication between you and your students and your teaching style and techniques. Strengths of your teaching, solutions to problems, and goals to pursue emerge in the course of the consultation. Subsequent tapings and viewings can be used to talk about progress toward those goals. If you are taped more than once, you may wish to continue your consultations with the same person perhaps because you have developed a common basis and goals for discussion.

Task
Please list the advantages of videotaping!
Unit 3: Verbal and non-verbal behaviour

Performing presentations in front of other teaching fellows

One of the most stressful situations you are likely to be placed in is that of presenting yourself and your material in front of a class. The process by which you present the material is equally as important as the content to be presented. Regardless of how well you have researched your topic, if the presentation is poorly prepared or unorganised the point will be lost. The audience will quickly lose interest.

By presenting yourself and your material/content in a lesson it is important to pay attention to your verbal and non-verbal behaviour. These are the first things that the other teaching fellows as well as the experienced teaching consultant will observe. Examples we would list for non-verbal behaviour are body language and posture, facial play and gestures. Examples we would list for verbal behaviour are language and communication supported by handwriting on a chalkboard, because they are the most important characteristics. Every teacher uses it.

Before we start to summarize a checklist for verbal and non-verbal behaviour think of your last presentations. Did you reflect your last presentations? You can see there is a lot you have to take into consideration. Now we would like to provide a list of criteria for verbal and non-verbal behaviour.

Non-verbal behaviour

Body language and posture:

✔ Do you use body language in a way that is natural for you and reinforces what you are saying? (gestures [hand and facial])
✔ Do you have eye contact with all students sometime during the class?
✔ How do you move? (use of space)
✔ Do you have your hands in your pockets? (poise)
✔ Do you exhibit any distracting gestures?

Verbal behaviour

Language and communication (oral):

Do you speak loudly and slowly enough so that you can be easily understood? (volume and rate)

1. Pitch
2. Fluency
3. Did you use too many fillers (e.g., "um," "like," "O.K.")?
4. Do you speak too much?  
5. Appropriate use of expert language?  
6. Breaks  
7. Grammar and expression  
8. Voice  

Classroom interaction/responses:

✓ Participation encouraged?  
✓ Handling of questions and answers  
✓ Ask for reasons of answers  
✓ Do you use different kinds of question techniques?  
✓ How do you react to right/wrong answers?  
✓ Do you name your students by their name?  
✓ Do you always try to get students to participate in class? How?  
✓ Do you try to get students who usually don’t talk in class to participate?  
✓ After asking a question, how long do you wait for a response? What do you do if no one answers?  
✓ When a student answers a question, how do you react to the student’s answer?  
✓ How do you react to  
  ✓ a correct answer?  
  ✓ a partially correct answer?  
  ✓ an incorrect answer?  

✓ Do you make sure that everyone can hear all questions and answers?  
✓ After asking if there are any questions, do you wait long enough to give the students a chance to think about what they want to ask?  
✓ When a student asks a question, do you make sure you understand the question?  
✓ Do you provide complete answers without going off on a digression?  
✓ If a student asks a question that would divert the class from the topic, how do you handle it?  
✓ If a student asks a question that you are convinced every other student in the class knows the answer to, how do you handle it?  

Board work:

✓ Is your writing legible and large enough so that everyone can easily see what is written on the board?
✓ Does your writing slant up or down?
✓ Do you put enough information on the board to complement the point you are making?
✓ Do you write too much?
✓ Are diagrams or other visual materials used effectively?
✓ Do you tend to erase things too quickly?
✓ Do you talk to the chalkboard even when you aren’t writing on the board?
✓ Do you use coloured chalk appropriately - that is to make a specific point?
✓ Is the material on the board arranged in a logical sequence?

**Task**

1. Work out checklists for observing a microteaching lesson. Especially look at the verbal and non-verbal behaviour of the teacher trainee!
2. Discuss the solution with your tutor and other teaching fellows in the chat room.

**Unit 4: Teaching skills**

There are high demands regarding the work of a teacher toady. We would separate it into four groups.

1. Personal/individual demands
2. Social demands
3. Methodical demands
4. Professional demands

shows examples for the different demands

<table>
<thead>
<tr>
<th>Personal/individual demands</th>
<th>Methodical demands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plausibility</td>
<td>Communication competence</td>
</tr>
<tr>
<td>Practical</td>
<td>Social competence</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Leader competence</td>
</tr>
<tr>
<td>Empathy</td>
<td>Management of conflicts</td>
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<tr>
<td>Cross-linked thinking</td>
<td>Planning and organizing competence</td>
</tr>
<tr>
<td>Able to perception</td>
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<tr>
<td>Able to reflection</td>
<td></td>
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<tr>
<td>Able to motivate</td>
<td></td>
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<tr>
<td>Social demands</td>
<td>Professional demands</td>
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<td>----------------------------------------------------</td>
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<tr>
<td>Dissociation of objective and subjective problems</td>
<td>Knowledge about the special occupational field</td>
</tr>
<tr>
<td>Diagnostic competence</td>
<td>Knowledge about didactics</td>
</tr>
<tr>
<td>Variety of methods</td>
<td>Use of media</td>
</tr>
<tr>
<td></td>
<td>Knowledge about teacher-student interaction</td>
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</tbody>
</table>

Based on these demands and inherent in the process of microteaching is what is called the teaching skills, i.e. the activity of teaching as a whole is broken down for learning purposes to its individual component skills.

These individual teaching skills are:

- Lesson planning - having clear cut objectives, and an appropriate planned sequence.
- Design introduction - the process of gaining students attention at the beginning of the class.
- Organizing their explanations using the most effective patterns
- Dividing the content into the most understandable units for easy comprehension
- Presentation: (teacher talk, discussion, conversation, demonstration) - explaining, narrating, giving appropriate illustrations and examples, planned repetition where necessary (i.e. describe, explain, react, argue)
- Explaining the message clearly using appropriate comparisons and examples
- Stimulus variation - avoidance of boredom amongst students by gestures, movements, focusing, silence, changing sensory channels etc.
- Appraise or compare differing approaches
- Proper use of audio - visual aids.
- Reinforcement- Recognising pupil difficulties, listening, encouraging pupil participation and response.
- Questioning - fluency in asking questions, passing questions and adapting questions
- Focusing on non-verbal feedback to know whether the students are thinking or listening
- Silence and nonverbal cues (body language)
- Closure - method of concluding a teaching session so as to bring out the relevance of what has been learnt, its connection with past learning and its application to future learning
- Summarizing the content as often as necessary
✓ Giving feedback after analysing another's explanation so that it is both accepted and usable

**Task**
You will discuss the teaching skills necessary to use and assess in ten minutes microteaching. Choose three of the following tasks:

✓ Choose a fact or term on a topic related to your vocational subject and explain it.
✓ Describe connections between a certain topic of your vocational subject.
✓ Discuss the pros and cons of teacher fronted learning in vocational lessons.
✓ Convince (use good arguments) your students of a new approach of a topic related to your vocational subject.

**Unit 5: Role-play**

Role Play is a technique in which participants (in this case: teachers) act out different roles in particular situations and later discuss their feelings and aspects of a certain problem. You can use role-play in small group teaching like microteaching.

**The Role Play Method** (co. HORTSCH 2004)

1. **The Introduction**

The definition of role-play has its origin in the theatre. The "role" of a character was written down on a parchment scroll. Roles are different patterns of action which are recognized by the partners within a social interaction as organized and determined. The classifications after game intention are:

✓ Interactive game and parlor game
✓ Scenic game
✓ Simulation game

2. **Methodical variants of the role play**

The methodical variants of the role play can be open/closed and planned/spontaneous.
Role play

The basic conditions for the role play are:

✓ Considering the time frame
✓ Socio-cultural and anthropological conditions
✓ "Non-role-players" have a function as observers
✓ The moderator has vital importance
✓ Observing the agreed rules!

3. The Rules of the Game

✓ Have a fair discussion!
✓ Try to point out your interests and views clearly and convincingly!
✓ Let the others get a chance to speak and pay attention to their examples and arguments!
✓ Have a realistic discussion!
✓ Try for a reasonable solution!

4. The process structure of the role-play is divided into different phases:

✓ Motivation phase
✓ Action phase
✓ Reflection phase

In the motivation phase you have to ease the situation, prepare for the roles and stay serious! The action phase is structured into elaboration and implementation. In the elaboration phase you have to:

✓ Describe the role play scenario and choose the players.
✓ Distribute the role play cards and the observation sheets.

In the implementation phase carrying out the role play. The reflection phase serves to looking back at the learning processes and to enhancing the ability of external-observation and self-observation.

5. The role of the moderator is very important and complex. He/she is responsible for:

✓ Selecting and monitoring of the procedures
✓ Gathering information
Making decisions  
Checking the time  
Conveying energy  
Correcting problems  

**BUT NOTE:** He/she does not act as a therapist!

**6. Before starting the role-play the moderator announce the steps of the role-play process.**

- Announcing the rules  
- Presenting the observation contents  
- Distributing the role-play cards  
- Conference (preparation phase)  
- Role-play phase  
- Evaluation  

**7. After the preparation the role play can be conducted. There are three phases of:**

- Compiling phase  
- Information phase  
- Preparation phase  

**8. On the importance of the reflection phase:**

- Leading the player out of his role  
- Clarifying the events (on the factual level)  
- Correcting misunderstandings and mistakes  
- Resolving tenses and anxieties  
- Elaborating conditions, emerging feelings and changes  
- Giving the players the opportunity to elaborate their ability for self-observation  
- Developing observation skills  
- Analysing causes for the events  
- Relating the actual events to the intended objectives  
- Helping to draw conclusions from the performed behaviour  
- Enforcing or correcting learning objectives  
- Showing new aspects which should be considered
Deducing possibilities for checking behaviour
Enabling the application on other situations
Establishing connections to previous learning
Drawing up a plan for future learning

9. Limits and problems of the role play are:

- The player leaves his role.
- The player fools around.
- The player presents a poor performance; he "runs dry".
- The players show a lack of insight and empathy.
- The players give repetitions and a tedious performance.
- An escalation of feelings takes place.
- Inhibitions, lack of linguistic competence and shortcomings in vocabulary on behalf of the students
- The cognitive process should not get lost because of enthusiasm for the game
- Organizational limit = lesson
- No interruption of the game and the evaluation phase

Advantages

The role play...

- Enables students to express hidden feelings
- Enables students to discuss own interests and problems
- Enables students to empathy and understanding
- Offers training in different behaviour patterns
- Displays generalized social problems and relations within a formal group interaction
- Gives academic and theoretic content life and actual relevance
- Offers taciturn students an opportunity for interaction
- Is motivating and effective
- Is student-oriented
- Overcomes the divisions between training and real life situations
- Changes attitudes
- Allows training in controlling feelings and opinions
Disadvantages

✓ The moderator loses control
✓ Simplifications may be irritating
✓ Time consuming
✓ Depending on the qualifications of moderator and students
✓ Its effects can cause symptoms of retreat and refusal
✓ May be interpreted to a great extent as entertainment or just play

Task

1. Modify the role-play!
2. Which role has each participant in the microteaching?
3. Apply the rules and basic conditions to microteaching! Pay attention to the different phases of the role-play!
4. Which aspects from the reflection phase can you use for the evaluation of microteaching?

Unit 6: Hints for proper installation and use of equipment

Video can demonstrate motion and sound simultaneously. They are powerful tools for simplifying complex concepts, processes, and procedures. Perhaps no medium can beat these two at showing changes over time, giving impact to topics, and gives the possibility to reflect your own teaching.

To show a video, all you need is a regular television monitor, video recorder and a video camera.

There are different formats for television sets and video recorders

✓ PAL/B for most of Anglophone Europe and Africa, the one you are likely to encounter routinely;
✓ SECAM for most of Francophone Europe and Africa;
✓ NTSC for North American countries.

Some television sets and video recorders have a multi-system. They can play tapes made anywhere in the world, but they cost about 50% more than regular one-system ones. Video tapes and video recorders that you are likely to encounter in higher education are classified, according to tape with, into:
✔ VHS - the commonest one. Most household video recorders are VHS. You should opt for this type.

✔ Betamax - a wider tape of good quality, but there are very few Betamax video recorders. Avoid this type.

✔ U-matic - a wide tape of very good quality, used in professional broadcasting. You need a special video recorder to play back U-matic tapes.

✔ Video 8 - small 8 mm tapes that resemble music cassettes. Not common at this stage, but they could be in future.

There are companies that will copy information from Betamax to VHS tapes. In fact, you can do it yourself. Think of a way to do it if you have two video recorders. Converting different broadcast formats is more complex. You need special companies to do this at about 10 times the cost of a normal blank video tape.

Production of Films and Videos within the Institution

You can produce video films yourself, if you contact your audiovisual unit in your university or your institution. If your institution has a Department of Mass Communications and Journalism, you should visit them to get ideas during your planning stages, because producing films and video tapes is a complicated, expensive process.

Steps for planning the use of videotaping

Prerequisites:

1. First look for a suitable room.
2. Are there enough light, electric current and sockets?

Technical resources: You need to obtain technical media and tools. Go around your university or institution, visiting centres where technical media and tools, however rudimentary, are kept. Which organizations in your locality could you approach? If your university or institution has links with outside institutions and organizations maybe you can use their technical media and tools?

3. Collect all the technical things you need like:
   - Cables
   - Video tapes
   - Video recorder
   - Television set
   - Microphone
   - Adapters, Plugs and so on

Informational resources:
4. Read the instruction in the handbook conscientious.

5. Use the help of the university's technical stuff.

**Task**

1. Summarize the material resources available in your university or institution as well as problems and possible solutions pertaining to videotaping.

2. What are the prerequisites and resources for the use of videotaping?

3. Test the all available resources. Propose a possible technical solution for conducting videotaping. Plan the process carefully!

**Unit 7: Teacher training in standard situations**

In the former units you have got to know examples of teaching skills, aspects of verbal and non-verbal behaviour and the use of technical equipment (videotaping) for a microteaching lesson. As well you know what the size of microteaching group is, what are the purposes and objectives of microteaching and who plays which role.

**Now you can plan and conduct a complex microteaching lesson**

Practice your presentation prior to the workshop. When you practice, use a conversational tone - the tone you use when instructing a small group of students. In the preliminary stages of the microteaching lesson it is possible to give your presentation in front of a mirror so you can practice changing your facial expressions. If you have access to a video camera, tape yourself and watch it. If possible, give your presentation to people who will give you feedback. In any event, make sure you practice aloud and not just in your head!

1. Remind participants of the goals for the microteaching lesson and guidelines for how it will be conducted. Establish an order for presentations and tape the presentations without taking breaks in between teaching fellows. A few specific skills are concentrated on e.g. questioning techniques, explaining (exposition) etc. during the lesson. Class size should be between 5 and 8 at most. The time limit is by far less than the normal 30 to 50 minutes in a regular lesson. This would take between 5 and 10 minutes.

2. Choose a familiar topic. Find something from your field that you think would be interesting to and understandable by this group of teaching fellows or choose a topic that is easy for you to talk about, like explaining one of your extra-curricular activities. Choose a teaching topic that you are comfortable with in order to focus on a particular teaching method or element. Select one entry from the list of suggestions to prepare. For variety, you might want to confer with other teaching fellows of your group so that different entries are chosen, but keep in mind that the content of the presentation is less important than the opportunity to practice.
3. Prepare a 5-10-minute microteaching lesson. While this is not going to be a formal speech, your presentation must be structured to have an introduction, body, and conclusion and be rehearsed to fit the 10-minutes. Think about and be able to articulate what you want your students to learn from your lesson (e.g., facts, concepts, skills, and/or values) and how your teaching methodology might work to fulfil your objectives. Prepare a brief, clear, and interesting explanation. You will have a chalkboard and an overhead projector (or other media) available to work with if you wish.

**NOTE:** Your group will provide feedback on organization and clarity of your presentation, interaction, individual style, and use of media. During the presentation you should establish and maintain eye contact, invite questions, speak loudly enough, and write legibly on the chalkboard.

4. Write at least one objective to guide your presentation. Be sure to state your objective(s) at the beginning of your presentation or lesson. Remember that an objective should be written in terms of what a student will be able to do as a result of the presentation.

5. Use the chalkboard, notes or note cards that outline your key ideas. Work from key words or an outline. Do not write out your entire presentation - you might be tempted to read it. Use props - overhead transparencies, PowerPoint, or the board. These tools can help you organize your presentation, emphasize the main points, and keep you on track. Provide handouts if appropriate. You may provide a handout so your audience can concentrate on listening rather than taking notes.

6. Ask questions and create ways for students to participate in your presentation. The other teaching fellows will be role-playing the students in your class. It will be more fun for them if you build in some questions or some sort of group participation.

7. What you want feedback on. You can specify to the group what you would like them to focus on. For example, you may wish to have overall, general feedback or perhaps you might wish for the group to simply attend to a specific issue, such as how you use questions or reinforcement with students.

**NOTE:** For evaluation of microteaching see unit 8

8. View one microteaching lesson. Remember that everything you will discuss in the lesson is confidential, and the tape is erased after the session. As a result, you can relax and focus on learning from the experience without having to worry about whether or not something is going into a permanent record. After every stage of the micro-teaching performance is reviewed and discussed, focusing attention on only one or two teaching skills, such as questioning techniques, motivation of class, class control etc. at a time.

9. When the group has finished discussing the first presentation, continue in the same way to view the other presentations on the tape and provide feedback for each of the other teaching fellows. After discussing all the presentations, ask each presenter to identify one area for change they want to remember the next time they are teaching. Go around the room and have each report what they have selected.
Rules

1. Respect confidentiality concerning what we learn about each other.

2. Respect agreed-upon time limits. This may be hard, but please understand that it is necessary. It sometimes seems difficult to cut off an interesting presentation before it is finished, or to impose an endpoint on a feedback discussion. However, the result of not managing the time carefully is that those who present last will not have their fair share of time to view their tape and get feedback from the group.

3. Focus on a few main issues: It is unlikely that you'll have time for a comprehensive discussion of all the strengths and areas for change in each person's presentation - and if you did, chances are that the presenter would not be able to benefit from that much feedback. Rather, focus on one or two key points of learning for each presenter.

4. Microteaching can be a good opportunity to focus on one or two aspects of teaching: for example, use of visuals, or eliciting answers from students. If you plan specifically to focus on one or two things, then we can focus on those things in particular when the other teaching fellows and the experienced teaching consultant give feedback.

5. Maintain collegiality. We are all in this together.

6. Stay psychologically and physically present and on task.

7. Respect others' attempts to experiment and to take risks.

8. Listen and speak in turn, so everyone can hear all comments.

9. Enjoy and learn from the process!

Task

1. Plan (in written form) and conduct (at your university or institution) a microteaching session.

2. What do you need to prepare for the microteaching lesson?

3. Choose a topic of your field.

4. Decide what you want to do: Teacher talk or maybe a demonstration?

5. Use the equipment proper.

6. Distribute the roles.

Unit 8: Evaluation of microteaching

A microteaching lesson is an opportunity to teach in front of teaching fellows and an experienced teaching consultant and hear constructive feedback. The feedback you
receive will tell you what you are doing that is effective, as well as what you can do to strengthen your performance.

The way in which feedback is given and received contributes to the learning process.

Most presenters are already somewhat nervous about the quality of their presentations, and tend to notice the negative features of their presentation much more than the positive ones. The feedback session is designed so that both the strengths of the presentation and potential areas for improvement are addressed.

Before you start the microteaching lesson you have to discuss the criteria of assessment. After conducting the microteaching lesson all participants view the videotape. Now, all inclusive you, have the role of auditors. Beside this all have to fill in a standard microteaching feedback form. Immediately after you have finished your 10-minutes presentation, your teaching fellows will be completing a standard microteaching feedback form. Then you will have the first opportunity to comment on how you felt that the presentation went. After that, your teacher fellows and your experienced teaching consultant will give you feedback in a discussion round.

Developing criteria for assessment: The microteaching form:

1. Organisation/preparation of microteaching
   - Role play
   - Group size
   - Explanation/introduction
   - Time limit

2. Verbal behaviour Language and communication:
   - Volume
   - Rate
   - Pitch
   - Stream of speech
   - Did you use too many filler words (e.g. "um, like, O.K.")?
   - Circumferences of speech
   - Expert language
   - Breaks
   - Grammar
   - Expression
   - Voice

Classroom interaction/responses:

✓ Participation of students
✓ Questions and answers
✓ Reasons of answers
✓ Question techniques
✓ Reaction of answers

Board work:
✓ Writing legible and large
✓ Writing slant up or down
✓ Enough information on the board
✓ Do you write too much?
✓ Visual material/media
✓ Use of coloured chalk
✓ Material in a logical sequence
✓ Use of notations

3. Non-verbal behaviour
   o Body language
   o Posture
   o Gestures (hand and facial)
   o Eye contact
   o Use of space
   o Poise
   o Distracting gestures

4. Teaching skills (f. e.)
   o Choosing a fact or term?
   o Describing connections between?
   o Discussing pros and cons?
   o Argue someone into something
   o Explain?
   o React?

5. Didactics/methods
   o Forms of teaching (teacher talk, conversation/discussion, demonstration)
   o Aims/objectives
consolidation of formerly acquired knowledge/skills D evaluation of results/outcomes; assessment of learner performance

- Didactic intention (A getting the learner ready for the learning act B opening up the contents for the learner C improving the availability of learning results for the learner D feedback on the performance level for learners and teachers

- Phases of the learning act (orientation, act/performing of tasks, evaluation)

- Methodical procedure

- Outline

- Internal structuring

- Clearrness of mental images

- Comprehensibility

NOTE: You will get further information in unit 5 "Prepare a Teaching Unit".

6. Use of media

- Technical components

- Informational components

When you are the person receiving feedback, it is best not to respond to each point but rather to listen quietly, hearing what other's experiences were during their review, asking only for clarification. The only time to interfere with what is being said is if you need to state that you are overloaded with too much feedback.

Remember that pointing out strengths is as helpful as recognizing and describing what seem to be the challenges faced by the person teaching.

Fair rules of giving feedback (as a teaching fellow or experienced teaching consultant)

When giving feedback, try to:

- Be specific rather than general. The more concrete the feedback is, the more useful it will be to the person receiving it. Tell the teacher trainee how these techniques contributed to the success of her performance.

- Be descriptive, not evaluative. Focus on the effect the performance had on you, rather than on how good or bad you perceive it to be. Thus it's good practice to begin most feedback with, "In my opinion . . . " or "In my experience . . . ."

- Describe something the person can act upon. Commenting on the vocal quality of someone whose voice is naturally high pitched is only likely to discourage him/her.
Choose one or two things the person can concentrate on. People can usually act on only a few pieces of feedback at any one time. If they are overwhelmed with too many suggestions, they are likely to become frustrated. When giving feedback, call attention to those areas that need the most improvement.

Avoid inferences about motives, intentions, or feelings.

Receiving Feedback (as a teacher trainee)

When you receive feedback, try to:

- Be open to what you are hearing. Being told that you need to improve yourself is not always easy, but, as we have pointed out, it’s an important part of the learning process. Although you might feel hurt in response to criticism, try not to let those feelings deter you from using the feedback to your best advantage.

- If you can, take notes as you are hearing the other teaching fellows and your experienced teaching consultant comments. Then you will have a record to refer to, and you might discover that the comments that seemed the most harsh when they were being said were actually the most insightful and useful.

- Ask for specific examples if you need to. If the critique you are receiving is vague or unfocused, ask the person to give you several specific examples of the point he/she is trying to make.

- Judge the feedback by the person who is giving it. You don't have to agree with every comment. Think about the person’s credibility when assessing the validity of her/his statements. Ask other people if they agree with the person’s critique.

In sum, be practical, tactful, and optimistic when giving and receiving feedback - both in the microteaching workshop and in your classes as well.

Task

1. Design a microteaching feedback form for a teacher talk. Classroom conversation and teacher talks will be used exemplarily for all forms of organisation of vocational teaching regarding their fields of application and criteria for design and evaluation.

2. If possible apply this microteaching feedback form.

Note:

If you have completed all units of the module, you can go ahead to the next modules. If you have not completed all units of the module, you are recommended to complete those missing units first before going ahead.
MODULE 12:

Improving teacher teamwork for better quality of TVET

<table>
<thead>
<tr>
<th>Nº</th>
<th>Name of Unit</th>
<th>Tests</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General information</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Relevance and functions of teamwork for teachers</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>Phases of team development</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Different team roles</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Elements of team development</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Apply cooperation and teamwork</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Manage a project group</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Evaluate teamwork</td>
<td>2</td>
<td></td>
</tr>
</tbody>
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SPECIFIC OBJECTIVES OF THE MODULE

The module 12: "Improving Teacher Teamwork for better Quality of TEVT" contains information about the different stages of team development, the rules of teamwork and aspects of problem-solving and evaluating teamwork. The introduction gives you an overview about basic knowledge of teamwork, e. g. why and when to use it and the different purposes of teamwork in a school environment.

It is intended that after studying this module you should be able to:

✓ Explain the difference between team work and group work
✓ Explain the importance of teamwork in the school environment and the different functions of teamwork for teachers, students and the school
✓ List criteria for good and effective team work
✓ Explain the four phases of team development and the consequences for team work
✓ Apply knowledge about the different team roles in actual team work
✓ Plan the work of a team by delegating assignments, holding meetings and solving conflicts
✓ Manage a project group
✓ Evaluate team work and draw conclusions for future work

PURPOSE OF THE MODULE

Input:

Knowledge and rules for teamwork
The phases of teamwork and knowledge about how to implement team work

**Expected outcome:**

Prepare, conduct and evaluate teamwork

- ✓ Learning about the advantages of teamwork
- ✓ Implement a team and evaluate teamwork
- ✓ Assessing the team culture
- ✓ Learning about different team roles and their importance
- ✓ Apply problem solving methods
- ✓ Apply moderation methods
- ✓ Assessment sheets for meetings and evaluation of teamwork

The module "Improving Teacher teamwork for better Quality of TEVT" contains seven modules. The modules describe the relevance and the different functions of teamwork for teachers; give information on basic elements and different phases of team development; describe the roles which exist in teams; explain how to cooperate in a team; inform about how to manage a project group and how to evaluate teamwork.

**GRAPHICAL STRUCTURE OF THE MODULE**

Improving Teacher Teamwork for better Quality of TEVT
GENERAL INFORMATION ON TEAMWORK

This chapter about general information on teamwork will give you an overview about the topic which contains a definition of teamwork and -to get a clearer understanding- explains the differences between teamwork and group work. In schools there can be a lot of different teams:

- Class teams (shared responsibility for students)
- Age-group teams (coordination of contents and achievement standards)
- Subject teams (working out subject standards)
- Project teams (short-term teams with one task)
- Supervising teams (Coordination of school development processes)

What is Teamwork?

To give a first definition of teamwork:

"Teamwork is a joint action by a group of people, in which each person subordinates his or her individual interests and opinions to the unity and efficiency of the group. This does not mean that the individual is no longer important; however, it does mean that effective teamwork goes beyond individual accomplishments."

The most effective teamwork is produced when all the individuals involved work towards a common goal. A common thread in all definitions on teamwork is that teamwork can be defined as a process among partners who share mutual goals and work together to achieve the goals. Therefore, teamwork allows teachers to discuss their work together and grow professionally. From all this, one aspect should be emphasized: Teamwork is a process among partners. Therefore it is important to know the different phases of team development and how to get everyone to participate and share their time and ideas in a motivating team climate.

- Teamwork is a working method where a group of people works together over a long period of time.
- Teamwork describes a cooperative and participative organization and leadership.
- By teamwork you will be able to notice:
  - Not just the ideas themselves but also connections between ideas
  - Not just conflicting views but differences bringing new insight to the whole
  - Not just the topics discussed but the unspoken questions and issues arising
  - Not just approval or disapproval but inner tensions as clues to underlying assumptions

What Constitutes a Team?

A team consists of at least more than two persons. The optimal size for a team is five to eight persons. This size allows the connection of ideas and experiences of the team
members with the opportunity to meet on demand, work effectively and develop a team identity.

For bigger teams it can be an advantage to form smaller teams according to topics to deal with tasks more systematically. From time to time results have to be discussed with the whole team.

A team should consist of persons with diverse knowledge and experience. Because of the different working structure of teamwork requires also new forms of communication.

**The Difference between a Group and a Team:**

It is important to recognize the difference between an individual working as part of a group and an individual working as part of a team. The list below stresses some differences:

<table>
<thead>
<tr>
<th>Team</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members work independently and work towards both personal and team goals, and they understand these goals are accomplished best by mutual support.</td>
<td>Members work independently and they often are not working towards the same goal.</td>
</tr>
<tr>
<td>Members feel a sense of ownership towards their role in the group because they committed themselves to goals they helped create.</td>
<td>Members focus mostly on themselves because they are not involved in the planning of their group’s objectives.</td>
</tr>
<tr>
<td>Members collaborate together and use their talent and experience to contribute to the success of the teams’ objectives.</td>
<td>Members are given tasks or told what their duty/job is. There is little room for own suggestions.</td>
</tr>
<tr>
<td>Members participate equally in decision-making, but each member understands that the leader might need to make the final decision if the team can not come to a consensus agreement.</td>
<td>Members may or may not participate in group decision-making.</td>
</tr>
<tr>
<td>Members are encouraged to offer their skills and knowledge, and in turn each member is able to contribute to the group’s success.</td>
<td>Members may have a lot to contribute but are held back because of a closed relationship with each member.</td>
</tr>
</tbody>
</table>

**TEST**

Below you can see different statements, please decide by choosing true or false which statement refers to a team!

<table>
<thead>
<tr>
<th>Statement</th>
<th>true</th>
<th>false</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. It consists of at least more than two persons.</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>2. Members work independently and they often are not working towards the same goal.</td>
<td>[ ]</td>
<td>[ ]</td>
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</tbody>
</table>
UNIT 1: RELEVANCE AND FUNCTIONS OF TEAMWORK FOR TEACHERS

In everyday life in school there are informal and formal groups which choose their tasks on their own or get them assigned. Some groups come together for a few years, for example those teachers who teach the same class, others for a longer time. But the necessity to work in groups does not create teams. Teamwork has become an important part of the working culture and most organizations and schools recognize that teamwork is important. Objectives of teamwork in school encompass different areas:

✓ Tasks which have to be managed
✓ Organizational structure of the school
✓ The individual

For the teachers and the school teamwork can have different functions which result in a better working atmosphere. Two main functions can be distinguished:

<table>
<thead>
<tr>
<th>On the organisational level</th>
<th>On the personal level</th>
</tr>
</thead>
<tbody>
<tr>
<td>teachers can cooperate in a team to achieve better and more efficient task results.</td>
<td>teachers are able to develop individual skills through teamwork or mentoring.</td>
</tr>
<tr>
<td>Complex tasks can be better managed</td>
<td>Each teacher can be relieved from work</td>
</tr>
<tr>
<td>For the solution of tasks there is more creativity</td>
<td>Each teacher can bring in more direct responsibility</td>
</tr>
<tr>
<td>Quality of teaching can be increased by combining specialized knowledge and experience</td>
<td>Each teacher can develop personal skills concerning reflectivity of other persons and of processes</td>
</tr>
<tr>
<td>A feedback culture can be installed to develop quality management</td>
<td></td>
</tr>
<tr>
<td>A better school climate and learning environment for students</td>
<td></td>
</tr>
<tr>
<td>learning environment for students</td>
<td></td>
</tr>
</tbody>
</table>
When does teamwork make sense?

The success of a team is basically determined by three conditions (given these conditions it is possible that a group can become a team):

1. Teams are then useful when complex tasks have to be answered which require different skills and competencies. Therefore, not every task is suited.

2. A team oriented school culture is a prerequisite for the success of teams. How much is teamwork valued and supported? Or is it just a false pretence for rationalization? Does a head teacher hope to reduce the number of teachers? Important aspects are: support through the school management, time resources, enough room for developing competencies and enough authority to decide.

3. The success of a team depends on expertise and the ability of the members to work together. Teamwork is always connected with individual satisfaction concerning work.

TASK

Name advantages of teamwork both on the organizational and personal level! Name two actual or imagined examples for topics suited for teamwork on your school!

UNIT 2: PHASES OF TEAM DEVELOPMENT

Every team can be characterized by its own dynamic which can be more or less distinct. The described phases will occur in different intensity but a team will run through all phases. When team members change or when someone new joins the team some phases are passed though with different intensity. It is important to know about these different stages of team development because they demand a certain management and it becomes clear why certain problems occur.

1st Phase, Forming:

Every team does have at least one forming phase. During this phase the team members get either appointed or find themselves together. This phase is characterized by ambivalence in behaviour and statements. There can be anxieties about the new tasks but also curiosity and interest in the new situation. In this phase the work centres on:

✔ To get to know the tasks
✔ To get to know the other team members
✔ To estimate the situation and dependencies

Important questions are:

✔ What are the reasons for joining the team?
✔ What can I achieve for myself in this team?
What can happen to me in this team?

2nd Phase, Storming:

A team enters this phase when it becomes clear who works with whom together and the task of the team is roughly structured. In this phase organizational and perspective questions have to be answered. This could be a very critical phase where it may be possible that members drop out of the team. It should be kept in mind that this can be a useful process, because the remaining members have a strong motivation. Characteristically the following problems occur:

- Difficulties with the tasks
- Resistance against the task
- Conflicts arise within the team
- Tensions emerge
- Positions fights may arise
- Forming of subgroups

Important questions are:

- What are the challenges for this team?
- What is the advantage for each member, the team and the school?
- What kind of tasks are to be coped with?

3rd Phase, Norming

After the most important topics concerning team task and organizational matters have been cleared this phase concentrates on shaping the concrete work of the team. Now the team has to establish working rules. That contains:

- Discussing information about the task
- Easing relationships
- Establish clear rules
- Differentiate team roles
- Developing a team culture

Important questions are:

- Which rules do apply for our team?
- How are the tasks assigned?

**Note:** The topics on how to assign task, establish rules and moderate meetings will be dealt with in unit 5.
4th Phase, Performing

After the three phases of Forming, Storming and Norming the basis is provided for successful action. This phase can be characterized:

- Working on the task
- Finding solutions
- The team is consolidated and structured
- Conflicts are solved
- Cooperation is possible

Important questions are:

- Who is responsible for which task?
- How are the tasks handled?
- What are the achievements?

The different Phases of Team Development

Forming

Storming

Norming

Performing

This pattern describes an ideal type of process for team development, but displays the different development steps which appear in every team work and should give an opportunity to identify and reflect upon own experiences. It should become clear that for some delaying work advancement the cause may not lie in the failure or fault of a single
team member, but that every team runs through comparable developing processes. This can be of importance for the work of a team.

**TASK**

Prepare a presentation for your student fellows and explain the different phases of teamwork in 5 to 8 minutes!

Think about these questions reflecting on your membership in a team and write down some keywords! Discuss them in the chat room!

**UNIT 3: DIFFERENT TEAM ROLES**

This unit explains the different team roles and gives an overview on the value and purpose of various team roles. Teachers have different backgrounds and different personalities and these have to be combined in a cohesive unit which is able to achieve tasks beyond the individual capabilities of its members. For working effectively it is important to be aware of this diversity and appreciate the different skills that each person brings into the team and that members are aware of each other's strengths so that tasks can be delegated appropriately. Team roles can be classified after organizational roles and after personal roles. To begin with the organizational roles will be described and after that the personal roles developed according to BELBIN.

**Different organizational team roles:**

**Team Leader:**

Team Leaders are responsible for moving the team to accomplish its task. Team leaders should ensure an environment that helps teams get their work done. For example, the team may need to meet regularly, or require work samples or other items. The team leader is responsible for obtaining these resources, and if they are unavailable then the team leader must inform the team of the situation and direct the team to consider other options.

**Team Facilitator:**

Make things happen with ease; help the group with the process and with the "how" decisions. Facilitators are often NOT a member of the team so they can remain neutral in team decision making. When a facilitator is part of the team, the role of facilitator may rotate from member to member. It is possible that the role of the team leader and of the facilitator is held by one person at the same time.

The team recorder is responsible for writing down the team's key points, ideas and decisions. Recorders can take notes directly to a pad. Some thoughts to consider when assuming recorder duties: Record comments verbatim as much as possible. If the recorder can't write fast enough, ask the facilitator to slow down or repeat a comment. Recording the team's ideas is very important, so invest the time to do it right. The recorder is responsible for documenting the team's process, discussions, and decisions.
**Time Keeper:**

In a busy team meeting where members are considering ideas, brainstorming, prioritizing, etc., it is very helpful to assign one person the responsibility of being the timekeeper. His responsibilities are to monitor how long the team is taking to accomplish its tasks. Provide regular updates to the team on how well or poorly they are using their time. Collaborate with the team leader, facilitator and others to determine new time schedules if the agenda has to be adjusted.

**Team Members:**

Team members don't have specific responsibilities, but their participation is critical to the team's success. Team members must agree to: Be enthusiastic and committed to the team's purpose. Be honest and keep any confidential information behind closed doors. Share responsibility to rotate through other team roles like facilitator, recorder, and timekeeper. Share knowledge and expertise and not withhold information. Respect the opinions and positions of others on the team, even if the person has an opposing view or different opinion.

**Different personality team roles:**

Another classification of team roles which can be made is a classification according to BELBIN. It is the most comprehensive work about the composition of teams. He/she analyzed the influence of the composition of teams of different personalities on the achievement. He/she identified eight different roles which result from the different personalities of the team members. The objective in knowing about these roles is that a team can develop realistic expectations concerning its members and typical patterns in team behavior can be analyzed. It is not important that every team has to contain all these roles, every team can only work effectively when there are a positive atmosphere and functioning communication processes and strategies for conflict-solving. In a combination of the different roles each member is supported by the strengths of the other, it is also possible that one person incorporates more than one personality trait. The list gives an overview about BELBIN’S roles:

- **The Coordinator**
  
The primary characteristic is that they carry the respect of the others. His role is to direct the group but he/she is not too dominant. He/she may intervene at critical points, particularly if there is controversy amongst other team members and will draw the discussion back to the intended purpose without offending anyone. The coordinator tends to be tolerant and is able to motivate others. He/she is goal orientated and knows how to make the best use of the resources which each team member can offer.

- **The Shaper**
  
  They have a high degree of energy and a great need for achievement. His directive approach is far more orientated achieving objectives than towards the stable maintenance of the team. The shaper is able to energize a team but has also few reservations about challenging others.

- **The Plant**
  

He is creative and innovative, responsible for the production of new ideas and novel strategies. Their ideas may often be radical and practical constraints may sometimes be overlooked. He/she likes to work independently and is not very team orientated although their ideas contribute to the team's success. It is the tasks of the coordinator to reject impracticable ideas.

✓ The Monitor-Evaluator

Though not creative himself, the Monitor-Evaluator is very good at weighing up the facts, carefully considering the pros and cons of each option and finally coming to a well considered decision. He shows little personal commitment but this enables him to be impartial in decision-making.

✓ The Team-Worker

It's a social but not dominant role and they will tend to place the group's objectives before their own personal ambition. He/she is perspective and diplomatic and not critical of other team members. In discussions he/she is able to calm down arguments and hence allow each team member to contribute effectively.

✓ The Completer

The Completer pays attention to detail. They are hard working and conscientious. As their title suggests they are good at picking up the loose ends and tying them up, but the Completer does more that this because they are also an organizer; they are concerned to ensure that the detailed aspects of a project are planned into schedules. The final stages of implementation may be left to a large extent in the reliable hands of the Completer, who will ensure that completion is finally achieved with no detail overlooked.

✓ The Implementer

He is conscientious and concerned with detail. They are good organizers and capable of directing subordinates and have a preference for routine. It is because of the Implementers capacity for application that they are often left to cope with aspects of work which are held by others to be difficult.

✓ The Resource-Instigator

He is highly effective when it comes to picking up new ideas and making them work and is able to find out what is available and what can be done. He is a negotiator, which clearly has a great value in the process of realizing ideas.

The idea behind BELBIN'S characterization is that every person has a different kind of personality and therefore acts in different ways within a team. It is useful to keep this in mind, for example when assigning tasks or in discussions.
The different organizational team roles and team roles according to BELBIN

<table>
<thead>
<tr>
<th>Team Leader</th>
<th>Team Facilitator</th>
<th>Team Recorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Keeper</td>
<td></td>
<td>Team Members</td>
</tr>
</tbody>
</table>

Organisational Level

Personal Level

Co-ordinator Shaper | Plant | Monitor-Evaluator |
Implementer | Team Worker |

Resource Investigator | Completer

TASK

List the fundamental organizational roles required in a team!
Name the advantages and disadvantages of BELBIN’S model of team roles!
Please assess which role in the BELBIN model you would consider for yourself (self-assessment) and assess the roles for each of your team member or teaching fellows!
Discuss the assessment with each other and the experienced teaching consultant!

UNIT 4: ELEMENTS OF TEAM DEVELOPMENT

This chapter describes the characteristics of good and effective teams. After you have learned about the relevance of team work, the phases of team development and the different team roles you will find out about the main aspects which should be considered in order to work effectively.

In order for the team to work effectively the team members must trust each other and believe in the project. It is vital that the leader invests time at the outset of the project putting into place “rules of engagement” for the team members that will prevent problems from arising unnecessarily.

1. Justifying the involvement of each individual

Often teachers have no or little experience in working together in a team and lack a proper understanding of each other’s area of expertise. It is useful to take some time to explain why each person has been brought into the team or alternatively explain the
own motivation for joining the team, what the particular expertise and relevance experience is.

2. Establishing clear rules of communication

Each team member may have different ways of communicating with others or in your school are certain communication channels more common than others. Therefore it is important that all team members share information about their access to and preferred use of various communication tools with one another. It is useful to produce a document which contains:

✓ Contact details for all team members
✓ Preferred means of contact for each person and for the team as a whole
✓ Establish clear reporting channels and set conference calls and monthly meeting times in advance so that all team members are aware of their commitments

3. Establishing common team values, standards and behavior

It is important that the team forms its own work ethic and agrees upon common values, it can be useful to work out

✓ Agreed timelines
✓ Active participation: every team member participates in the team work
✓ Self-responsible: every team member stays self-responsible for his own work
✓ Agreed rules of communication rules in meetings and discussions (one speaker at a time, avoid monologues, first person statements, fault tolerance)

4. Create a team culture

In a good team there is a team culture where everyone is respected and where different opinions are accepted and conflicts are solved and not avoided. Critique is seen as a constructive element in the working process and is not expressed as personal offense. Therefore, an open and constructive feedback culture has to be developed, for example after meetings.

5. The team must have a clear goal and evaluation of achievements

Team goals should call for a specific performance objective, expressed so concisely that everyone knows when the objective has been met.

6. The team must receive external support

For effective team work it is important that the work of the team is supported if necessary by the responsible persons of the school authority as well as other teachers who may not be directly involved.
7. The team must have principled leadership

Team members must know that the team leader has the position because they have good leadership skills.

Note:
All these different elements and characteristics of a team can be evaluated. For more and comprehensive information on evaluation of teamwork see unit 6.

TASK

Write down three indicators for each element!
Think about your school and the conditions for a possible or actual team culture; discuss the problematic and/or positive conditions with your teaching fellows!

UNIT 5: APPLY COOPERATION AND TEAMWORK

This unit describes how to carry out teamwork, that is how to cooperate effectively, how to assign tasks as a leader of a team, how to manage and moderate meetings for a successful outcome, how to communicate in a team and how to identify and solve conflicts, which can appear in every team.

Therefore meetings are a very crucial aspect of teamwork. They are the place where ideas get discussed, problems and conflicts may arise and get solved and where every team member has the opportunity to discuss his or her ideas openly. The next part of this unit will describe how to hold meetings and make them successful for teamwork.

How do Team Meetings become more effective?

A team meeting consist of different phases, in a first step all team members gather the relevant facts, information and experiences, in a next step all member come to shared judgement about objectives, wishes, criteria and opinions and in a last step there has to be a joint decision about alternatives, agreements and consequences.

By planning a team meeting it is useful to differentiate between plan which will range over a longer period of time (for example a school year) and plans which apply directly to the actual team meeting. In contrast to the actual team meeting, which can be worked out by the team member who is responsible for the planning, long term plans should involve the whole team.

For long-term plans it is important to consider a realistic time schedule, topics and priorities for example at the beginning of a school year:

- Short-term
- Medium-term
- Long-term

In a next step the team should agree on some focus points:

- Plans (lessons, projects)
Objective orientation, basic principles
Reports
Decision-making process
Controlling of decisions, evaluation of objectives

It can be useful to plan an extra meeting for the distribution of organizational tasks. For the planning and conducting of an actual team meeting there are different things to consider:

Hand out the meeting agenda
Determining the responsible persons for preparing the agenda items
Specifying the estimated time of the meeting
Naming the objective of the meeting: what should be reached?

Before conducting a team meeting the necessary roles should be clear, that is who will lead the meeting and who will write a protocol. Further things which are important:

Controlling the decisions of the last meeting
Agree on the objectives of discussion of the actual meeting
Make short brakes
Make a to do list and a work schedule
Make sure that team members who are missing will get all the relevant information
Summarize the discussion and the conclusions and objectives
Make sure that ideas that may not belong to the actual discussion are written down for further use

At the end of a team meeting you should work out a working schedule which contains who is responsible for what, with whom and until when. The described methods and aspects to consider making a team meeting more effective can not work when there are underlying problems or conflicts within a team. The following remarks should explain how to recognize conflicts and how to handle them. Remember that according to unit three conflicts are a part of team work and can be used for constructive team development.

**Team-moderation**

Teamwork is not easy to organize, poorly planned meetings can lead to discontent and unclear problem solutions will not tap the full potential of the team. But there are a lot of different presentation methods which will turn every discussion into a goal-oriented working process. Therefore, presentation methods can be very useful; you should always start from a topic with corresponding central questions:

How do we succeed in...?
How do we achieve...?
On which way could we...?

The next step is to gather ideas or factors which apply to the questions. This is followed by identifying aspects that belong together and rearranging all the ideas. The last step is to weigh the clusters of ideas according to their importance. The team moderation method works with cards and flip chart sheets. On this way the team can close each topic by implementing an action or by making appointments this can be also visualized and documented. By this a team can learn to control its own decisions and come to see these decisions as part of an ongoing process. The moderation method is the working tool for the everyday team work; it is useful to change the role of the moderator and to give a feedback at the end.

How to agree on objectives

A systematic approach to team work requires objectives which describe challenges. Objectives could be negotiated within the team or agreed with the head master or the head of the department. They can be described as:

- Objectives of action
- Objectives of processes
- Objectives of goals

and should contain precise information on time and amount which can be controlled. In the concrete situation methods and measures can be assigned to certain objectives. With milestones it is possible to control whether the objectives have been reached by the team.

How to assign tasks

To assign tasks is very important in the team working process. The team leader has to monitor the tasks and has to assign them to the team members.

A task

- A task is a specific assignment to achieve an output within a given time and within given resource limits.
- It requires the construction of a pathway (method) of relevant complexity (work).

Task assignment

- Normally occurs within a direct reporting relationship
- Sets up a framework for the person to perform her/his work within
- Is a social process between two people

Before assigning a task the following items for the task formulation should be considered:
Task formulation

✓ Deciding what work to assign
✓ Clarity of the task: The person needs to get a clear instruction.
✓ Considering the individual capability required (who)
✓ What does he/she need to handle the task?
✓ Responsibility and Information: the team member needs all important information and enough space for own decisions.
✓ Decision: The team members have to decide whether or not they want to take over the task
✓ Establishing the context (where does the task fit, impact) and purpose (what and why should be achieved)
✓ The output required and completion time should be clear
✓ Articulating the specified vs. scoped dimensions
✓ Checking to consider common understanding
✓ Reviewing priorities for other/multiple tasks
✓ Setting a system for review (when)
✓ Time management of the assignment: good assignments have a clear time limit and are concise
✓ Feedback: a regular feedback with the whole team and approval of work done so far is important for the team work process as well as for the motivation.

A common understanding about the dimensions of the tasks should be done together with the team. Because team work is a process where a lot of teachers may be involved with different backgrounds and experiences but also with different potential, a very important aspect of team work is communication and cooperation. A good functioning communication and cooperation can be disturbed by conflicts, therefore it is important to know how to solve them.

Conflicts

The goal of the following is to help you to understand two things:

1. Conflicts exist in every team. There is nothing bad about conflicts. A conflict contains energy and this energy can be very helpful for a team.

2. It is important not to be afraid of the conflicts in a team. But it is absolutely essential for a team that conflicts are solved and cleared up. If this is not done, the planned development of any team or project will be hampered.

There is a **conflict**, if two elements exist at one given time together and they oppose each other or are incompatible.
Conflicts belong to our daily life. There are conflicts which I have within myself. Other conflicts I may have with members of my family, at my work or with the group or project I am working in. Conflicts are a disturbance of our routine. People who are involved in a conflict often feel that they don’t know what to do next.

Conflicts are depressing. When in the middle of a conflict, the people involved feel unhappy and uneasy. Sometimes it is not clear that it is actually a conflict which causes this feeling of unhappiness. Often conflicts with certain people are intentionally avoided out of fear that they might damage our relationship.

Conflicts have a tendency to become worse the longer they exist. What started as a small thing between two people suddenly involves the whole community they live in and a lot of different subjects, without anybody knowing where it really came from. That is why conflicts need to be solved. As long as they go on, nobody can return to his/her normal daily routine. Sometimes such unresolved conflicts can affect the life of a family for dozens of years or disturb the work of an organisation for a long time. Conflicts can have more than one solution. Therefore, we have to consider and hear all people involved and find the solution that fits to most, or even better, to all of them.

**Conflict-Solving Strategies**

There are different ways of handling a conflict. They depend on the type of conflict and on the atmosphere in the team. But in general, the conflict solving strategies listed below from 1 to 7 provide a constructive way of finding solutions. The first and most important step is that every team member becomes involved in the solving of the team's conflicts. The following strategies are listed in an order of becoming increasingly recommendable - although the goal is actually very difficult to reach!

1. **Avoiding the conflict**

Teams that avoid conflicts remain on the surface of their relationships: they don't allow opposition or submit themselves to any arising opposition. Their conflicts are denied, kept hidden or suppressed.

2. **Elimination of the conflict party/parties**

Members that oppose or disrupt the team's aims and objectives are driven out of the group. This can happen through punishment, bad talk or just ignoring their wishes. This means for the opponents that they have to go. Their thoughts are: "We give up" "We are insulted" or "We are going to forming a team of our own."

3. **Suppression of the minority**

The team suppresses those with other opinions by any means they have. The minority is expected to listen and obey to what the majority wants and thinks is best for the group (e.g. for them). For some time this strategy will work, because the minority is afraid, but sooner or later tensions and hostility will become so strong, that the group will break apart. Voting is actually a smoother form of suppression as well, because there will always be a winning majority and a losing minority.
4. Agreement

The majority rules and decides, but the minority does not feel oppressed by that and agrees to what is proposed.

5. Alliance

The different parties do not give up their different opinions, but they agree on a common point to reach a step both think it is good for them. The conflict is still there, it is just sleeping for a while, until the step or the short-term goal is reached. If that is done and the conflict is still there, it will arise again.

6. Compromise

When the parties involved in a conflict have about the same amount of power and cannot oppress each other, they will look for a compromise: Each group gives in as much as it thinks it can stand to in order to reach a better solution in the end. Conflicts are very often solved like this. The parties think “better to give in a little bit to reach some sort of solution than none at all”. But they are not fully happy about the final solution, as it is often less than they expected.

7. Integration of the different wishes into a new one

This form of solving a conflict is the best, but also the rarest. The different opinions are discussed, weighed against each other and measured against the common aim. The whole team is involved in the conflict solving process and each member takes care that his/her wishes are recognized as much as possible. This solution can differ from the wishes of the conflicting parties, but the new-found common solution could be an even better one than the ones that existed before: something new was created by involving everyone

**TASK**

Develop a checklist for the important aspects for a long-term plan and for an actual team meeting!

Prepare a team presentation with your teaching fellows on a topic of your choice about 15 minutes for other teaching fellows! Get a team together and plan your work schedule and distribute the organizational roles! What kind of problems did appear? Discuss the outcome with your experienced teaching consultant!

**UNIT 6: MANAGE A PROJECT GROUP**

In the former chapters you have learned about the difference between group and team work, in what areas you can use teamwork and what kind of relevance it can has for the school and the individual teacher. You have also got information on the different phases of team development, the different team roles and important elements of team
development. In unit 5 the important aspects of how to hold meetings and moderate them, how to agree on objectives, how to assign tasks and, also important to consider, how to solve conflicts have been discussed.

Now, you can plan and manage an own project group! The project should not take longer than two days and should have a clear objective. Consider the discussed units and start by thinking about an interesting area or topic which is suited for team work. Get together a team of interested teachers; if possible consider different experiences and skills. Plan a long-term and short-term agenda and distribute the different organizational roles. This unit should give you extra information about methods that will help you in gathering and structuring ideas.

Steps for gathering ideas

Start by writing the question. “How could we achieve that ...” on a flip chart. The moderator writes and is responsible for that everyone applies to the rules. The other team members express their ideas; this can be done with different methods, for example by brainstorming, mind mapping or a morphological box (see information below). There should be no interrupting questions and no assessment of the mentioned ideas. All team members have to follow these rules and it is desired that members bring in their different way of thinking about a problem.

Judge the ideas after you have developed a list and have ordered the ideas according to a main focus point. After finding a solution you should consider the work you could do as a team and the work which requires outside help and support. In a next step you have to consider how to implement the solution, this demands an exact plan about the working procedure, agenda, dead lines and responsibilities.

Problem-solving methods

Brainstorming

Brainstorming can be a useful first step to gather ideas together with the team. It is an excellent way of developing many creative solutions to a problem. It works by focusing on a problem, and then coming up with very many radical solutions to it. Ideas should deliberately be as broad and odd as possible, and should be developed as fast as possible. Brainstorming is a lateral thinking process. It is designed to help you break out of your thinking patterns into new ways of looking at things. During brainstorming sessions there should be no criticism of ideas. You are trying to open possibilities and break down wrong assumptions about the limits of the problem. Judgments and analysis at this stage will stunt idea generation. Ideas should only be evaluated once the brainstorming session has finished - you can then explore solutions further using conventional approaches.

Mind Map

A mind map is a useful method to structure gathered ideas and enables you to see connections between topics. It can be used for nearly every topic (organizational, regarding content etc.)
The main topic / the basic idea is arranged in the center and can be grasped very fast. The graphic representation supports thinking and regularities can be recognized quickly. A glance on the mind map is enough to know what its about.

The branches display the relative meaning of a thought or an idea very well. By this hierarchies and structures are made.

A mind map reveals gaps. Because of the graphic presentation it is very easy to see which thoughts are already well developed and the ones which are not fully developed by now (like a blank cell in a chart)

By using keywords one can concentrate on the essential facts; at the same time, time (to develop and read) and space (on the paper) are saved.

The mind map is excellently suited for repetition of the subject matter; the basic ideas are already comprehended, for reconstruction and recollection keywords evoking associations are sufficient

For a mind map one sheet of paper (DIN A4, better: DIN A3) is sufficient; information is locally collected, thereby content can be easier and faster comprehended

A mind map can organically grow; through further branches it is always open for extension

Every mind map looks different; therefore you will easily remember its form and content

Connected ideas/approaches/basic thoughts can be enclosed by framing or marking them with a coloured label

Morphological Box

The morphological analysis is actually a group of methods that share the same structure. This method breaks down a system, product or process into its essential sub-concepts, each concept representing a dimension in a multi-dimensional matrix. Thus, every product is considered as a bundle of attributes. New ideas are found by searching the matrix for new combination of attributes that do not yet exist. It doesn't provide any specific guidelines for combining the parameters. It tends to provide a large number of ideas.

The morphological analysis has several advantages over less structured approaches:

✓ It may help us to discover new relationships or configurations, which may not be so evident, or which we might have overlooked by other - less structured - methods.

✓ It encourages the identification and investigation of boundary conditions, i.e. the limits and extremes of different contexts and factors.

✓ It also has definite advantages for communication and - notably - for team work.

✓ It allows us to find possible solutions to complex problems characterised by several parameters.
✓ Richness of data - it can provide a multitude of combinations not yet explored.
✓ Morphological analysis is a proven creative method that leads to "organized invention." The technique allows for two key elements:
✓ A systematic analysis of the current and future structure of a problem area (or domain) as well as key gaps in that structure.
✓ A strong stimulus for the invention of new alternatives that fill these gaps and meet any imposed requirements.

Essentially, morphological analysis is a method for identifying and investigating the total set of possible relationships contained in any given, multi-dimensional problem complex that can be parameterized. In his main work on the subject, Discovery, Invention, Research through the Morphological Approach ZWICKY summarises the five (iterative) steps of the process:

Procedure of the morphological approach according to ZWICKY

<table>
<thead>
<tr>
<th>First step</th>
<th>The problem to be solved must be formulated very concisely.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second step</td>
<td>All of the parameters that might be of importance for the solution of the given problem must be localized and analysed.</td>
</tr>
<tr>
<td>Third step</td>
<td>The morphological box or multidimensional matrix, which contains all of the potential solutions of the given problem, is constructed.</td>
</tr>
<tr>
<td>Fourth step</td>
<td>All solutions contained in the morphological box are closely scrutinized and evaluated with respect to the purposes that are to be achieved.</td>
</tr>
<tr>
<td>Fifth step</td>
<td>The optimally suitable solutions are selected and are practically applied, provided the necessary means are available. This reduction to practice requires in general a supplemental morphological study.</td>
</tr>
</tbody>
</table>

Steps 2 and 3 form the heart of morphological analysis since Steps 1, 4, and 5 are often involved in other forms of analysis. Step 2, identification of parameters, involves studying the problem and present solutions to develop a framework. This step is useful to develop a relevance tree to help define a given topic. Once parameters are identified, a morphological box can be constructed that lists parameters along one dimension. The second dimension is determined by the nature of the problem. Morphological box

<table>
<thead>
<tr>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter A</td>
</tr>
<tr>
<td>Parameter B</td>
</tr>
<tr>
<td>Parameter C</td>
</tr>
</tbody>
</table>
This short overview of problem-solving methods should give you an idea on how problems can be handled. These methods can be used in meetings at the nearly every stage in the team working process, especially in the beginning.

**TASK**

The project should not take longer than two days and should have a clear objective! Consider the discussed units and start by thinking about an interesting area or topic which is suited for team work. Get together a team of interested teachers; if possible consider different experiences and skills. Plan a long-term and short-term agenda and distribute the different organizational roles! Monitor your working process carefully! Discuss your experiences with other teaching fellows!

**UNIT 7: EVALUATE TEAMWORK**

To evaluate means to assess something, to find out how good or valuable or worthwhile something is or was. In order to increase individual accountability and a sense of duty to the other team members it is important that a way of tracking the team’s output against target is produced and milestones put in place. Team work can be evaluated at all different phases with a different focus. This chapter will explain why evaluation is important, what and how to evaluate. At the end of this unit you should be able to work out a checklist for different evaluation topics concerning teamwork. There are a lot of reasons why projects or team work should be evaluated:

1. To see what has been achieved
2. To measure progress
3. To improve the monitoring of a project
4. To identify the strengths and weaknesses of a program
5. To find out if an effort was effective (if necessary measure the cost-benefit relations)
6. To collect information to improve planning and management
7. To share experience in order to help others
8. To improve the effectiveness of a program
9. To improve the planning for new work phases

Points to consider:

- Identification of evaluations areas
- Development of appropriate indicators
- Development of evaluation material
Collection of data, analysis, provide feedback
Report and dissemination of the results

When

Evaluation is necessary and should be done at key points in teams for example when cooperation becomes a problem, when there is a conflict to be solved and at regular times in a project, when a special point is reached and when decisions have to be made and of course at the end. That means team evaluation can be useful to assess: the quality of meetings, the leadership, the team climate, progress and the overall end-of-project evaluation.

What

Participatory evaluation or self evaluation is a process of getting participants to reflect critically on their own project, program aims and leadership. It is participant-centered, expressing the value and learning process it has for the participants themselves. After deciding when to evaluate you have to think about what you want to evaluate and have to develop indicators for each area of interest. It is important to note that the indicators for the evaluation areas have to be developed by the team. The following exemplary questions can be used to assess the effectiveness of a team:

Climate/Communication

- Are team members willing to communicate their concerns?
- Is there an open expression of ideas possible?
- Is it possible to express openly critique?
- Are conflicts being solved?
- Is constructive feedback given freely to improve decision-making?

Participation

- Do all team members understand team goals?
- Are all team members committed to these goals?
- Do team members recognize and reward team performance?
- Do all team members value one another's contributions?
- Does the team keep in mind the benefits for the school and the teachers?

Leadership
Is leadership effective?
Does the leadership promote team actions and decisions?

Organization

Does everyone know his responsibilities/tasks?
Are team meetings held at a specific time?
Do Meetings have a clear time limit?
Are protocols being done?
Does everyone agree on decisions?
Has the meeting an agenda?
Is everyone prepared for meetings?
Are rules being followed?

How

It is recommended to use different methods of evaluation, because some people deal better with written questionnaires, others better orally. The method depends also on the topic: if people should express their feelings it is better to do orally, if a whole course or a large project is to be evaluated and answering a lot of questions has to be done, the written form might be more suitable. Suggested methods are:

Written checklists
Oral interviews
Group discussion
Observation
Combination of the above methods

Examples

The energy in a group and the ability to achieve a goal and to work effectively increases immensely, if all members of a group agree on the same goal. Therefore, in project-planning, we have to make sure that all participants of a project agree completely on the goal and understand it. This can be done, for example, by asking the group members to write down silently for themselves what they perceive as the goal of the team. After that the answers are read out loud and the team discusses whether they did all agree on the same goal for team work. Plan about one hour depending on team size.

For a short oral evaluation of emotions or opinions you can use the flashlight method and ask each person to say in one or two sentences what he or she wants to say to the team. This method is also useful when a decision needs to be made and the

How to achieve consequences for the future
The primary aim of team work consists in working on a special problem for a certain time. The results of that work have an immediate effect on the school organisation, students or teachers. But all involved could benefit if teamwork has lasting consequences and long term effects. This presumption means on the one hand it is important that a team realises reached decisions and on the other how to use this kind of cooperation after the actual tasks have been done.

- Collect results
- Display/disseminate results
- Inform other teachers, students, head teacher etc. about results
- Reflect on your own experience, strengths and weaknesses and visit training courses of interest

If a program, course project or team work was successful in the way it worked, why not spread the news to others going the same way? Exchanging ideas and results, giving examples and motivating others to go on a similar way is another way of using evaluation data. This can be done orally by members, it can also be done in form of a written report a film or any other medium.

**TASK**

Name the relevant points to consider when evaluating team work! Evaluate one aspect of your teamwork in the carried out project with a suitable instrument! Discuss the results with your team members and discuss your experiences with the other teaching fellows!

**Note:** If you have completed all units of the module, you can go ahead to the next modules. If you have not completed all units of the module, you are recommended to complete those missing units first before going ahead.