Modern Training and Teaching Methods

Uwe Wieckenberg

Content

Brief Information about the Author

Mr. Wieckenberg holds M.A in Political Science and Education from the University of Heidelberg, Germany. After his studies he worked as scientific employee at the „Distance Study Center" of the University of Karlsruhe. In this position he was responsible for the development of distance learning courses in several subjects. In this period he integrated electronic media into the development of these courses and combined both the classical approach through correspondence learning and the modern approach through computer mediated communication – the „e-learning" approach.

In 1997 he changed to the "Center for Distance Studies and Continuing Education" of the University of Kaiserslautern, which is managed and directed by Prof. Dr. Arnold.

At the Center he developed and implemented distance education certificate courses.

Mr Wieckenberg has relevant experience in international development cooperation for e-learning, distance learning and teacher training programmes.

Learning Objectives

After going through this module you will be able to

- know about different challenges of educational systems;
- know about the effects of using „old" or traditional versus modern methods in teaching, training and learning;
- assess the weight of the generic and transversal skills in education (key qualifications);
- have an impression on different learning theories;
- know about the importance oft he application of modern methods of teaching;
- know about different Interactive, participative and motivating training methods and techniques;
- know about the effects of using these methods in teaching, training and learning;
- select appropriate methods and techniques according to the desired learning outcome;
- know about advantages and disadvantages of these methods and techniques;
- know about different aspects of „good teaching";
- know about the benefits of the orientation towards learning outcomes;
- know about different categories of learning outcomes;
- know the characteristics of appropriate learning objectives;
- know the relevance of vocational and educational standards.

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Glossary of Terms

Affective	Affective learning is demonstrated by behaviors indicating attitudes of awareness, interest, attention, concern, and responsibility, ability to listen and respond in interactions with others, and ability to demonstrate those attitudinal characteristics or values. This domain relates to emotions, attitudes, appreciations, and values, such as enjoying, conserving, respecting, and supporting. The two other domains are cognitive and psychomotor.
Cognitive	Cognitive learning is demonstrated by knowledge recall and the intellectual skills: comprehending information, organizing ideas, analyzing and synthesizing data, applying knowledge, choosing among alternatives in problem-solving, and evaluating ideas or actions. This domain on the acquisition and use of knowledge is predominant in the majority of courses. The two other domains are affective and psychomotor.
Competency	Competency is conceived as the group of attitudes, dexterities, skills and knowledge required to carry out to a good standard determinate productive functions in a work environment.
Correlation	relationship between things that happen or change together, e.g. the correlation of brain size and intelligence — or the high/ strong correlation between poverty and crime; "researchers have found a direct correlation between smoking and lung cancer."
Curriculum	A curriculum is defined as the inventory of activities implemented to design, organise and plan an education or training action, including the definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers.
Learning outcomes	The set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal or informal.
Psychomotor	Psychomotor learning is demonstrated by physical skills; coordination, dexterity, manipulation, grace, strength, speed; actions which demonstrate the fine motor skills such as use of precision instruments or tools, or actions which evidence gross motor skills such as the use of the body in dance or athletic performance. The two other domains are affective and cognitive.
qualification	The term qualification covers different aspects: (a) formal qualification: the formal outcome (certifi cate, diploma or title) of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards and/or possesses the necessary competence to do a job in a specifi c area of work. A qualifi cation confers offi cial recognition of the value of learning outcomes in the labour market and in education and training. A qualifi cation can be a legal entitlement to practice a trade; (b) job requirements: the knowledge, aptitudes and skills required to perform the specifi c tasks attached to a particular work position (ILO).
qualification framework	An instrument for the development and classifi cation of qualifications (e.g. at national or sectoral level) according to a set of criteria (e.g. using descriptors) applicable to specifi ed levels of learning outcomes.

Preface

In this module you will find a variety of reasons, why modern methods of teaching should be used in TVET. The text starts with an outlook to the future and the implications for the education system and in particular for learning, teaching and training. Below the surface of this text you will find the idea that educators, teachers, trainers, instructors will have to change their teaching behaviour to be able to educate the younger generation to be better prepared for the world of work.

After a more theoretical part at the beginning the main focus is the application of different modern teaching and learning methods in TVET. Before comming to these methods you will get a brief rationale why we are concentrating on methodology, how the role of teachers should change and what basic principles of teaching you should apply to get good results. A selection of different teaching methods is presented and waiting for implementation. The last part of this text deals with the importance of clear learning objectives and the outcome orientation of all teaching and training activities.

1.   Look to the Future

Lets have a look to the future. The following quotation is from the study „The Future of Learning: Preparing for Change" initiated by the European Commission aiming to identify, understand and map how learning strategies and trajectories are expected to change in the near future.

„A vision for the future of initial Education and Training

Initial Education and Training will need to react more effectively and promptly to changing job requirements and societal trends. They will need to better address and narrow the current gap between the world of education and the world of work. In the future, learner-centred, decentralised, and tailor-made learning strategies will prevail, which will (need to) be accompanied by corresponding pedagogies and teaching strategies as well as flexible curricula, modified assessment and validation mechanisms and closer collaboration with other societal players, including tertiary education providers and prospective future employers.

Personalisation in Initial Education and Training

The key for unlocking the future of learning will be the promotion of personalised learning plans and tailor-made learning activities. Personalised learning will facilitate the social and cultural integration of migrant children and help them to overcome language barriers; it will enable teachers to detect students at risk of dropping out, help them to diagnose the problems and learning needs and to offer re-engagement strategies; and it will help develop talent and foster excellence by providing more engaging and challenging learning opportunities. A mix of different technologies will support personalisation, by following for a diversity of learning activities, tools and materials; by providing tools which support continuous monitoring and support diagnostic, formative and summative assessment strategies; by making educational resources openly available; by allowing for the implementation of collaborative projects; by offering learning opportunities that are motivating, engaging and even playful; and by supporting multilingual environments.

Collaboration in Initial Education and Training

E&T institutions need to re-connect with society to better align learning objectives and societal needs. In the future, European societies will be more intercultural and flexible. Young people need advice and guidance to come to terms with the increasing rate of change and find their way in a complex world. Schools must offer them the orientation they need and promote mutual understanding and active citizenship, in direct interaction with society. Thus, collaboration not only within the classroom, as it is (or should be) practiced today, but with the community at large, and with people from other social, cultural or age groups, ill become increasingly important to enable younger learners to come to terms with life in an increasingly diverse and uncertain world. Virtual study exchange programmes, internetbased intercultural exchange projects, online massive multiplayer games, simulations and other internet-based services can assist schools in allowing learners to experience, understand and reflect upon societal developments in a safe and protected environment.

Informalisation of Initial Education and Training

In the past, one of the major roles of schools was to make knowledge accessible to all citizens. Today information has become a commodity that is available anytime and anywhere. Thus, the future role of schools will be to guide students in identifying and selecting the learning opportunities that best fit their learning styles and objectives; to monitor progress, realign learning objectives and choices and intervene when difficulties arise; and to implement viable assessment, certification and accreditation mechanisms. Schools will become learning hubs

which offer guidance and support for learnercentred learning pathways, tailored to individual learning needs, paces, modes and preferences. Achieving this requires flexible curricula; teachers who are trained to effectively guide and coach students in their learning endeavours; competence-based assessment strategies that are to a certain extent independent of the concrete learning content; and certification mechanisms that allow alternative learning experiences to be integrated into school education".
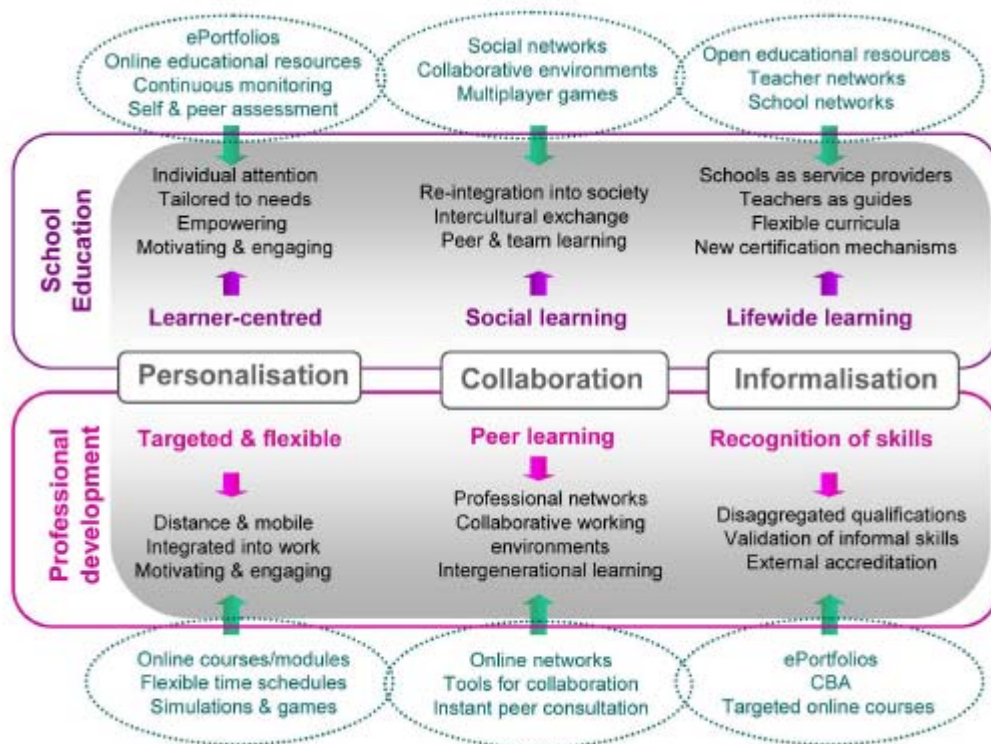
Source: European Commission 2011, p. 11-13.

Activity 1:

This statement refers to the changing job requirements and societal trends on which TVET needs to react more efficiently.
Please note at least three different trends (concerning labour market or society) on which TVET in Pakistan needs to react.

The study „The Future of Learning: Preparing for Change" continues with the description of major trends which influence the development of TVET.

a) **Demographic trends in the society**:
   it makes big difference if the society is getting older („aging society") or if

it is a society with a high birth rate and a growing share of the population wants to be educated.

b) **Globalisation**:
As new global competitors with innovation capacity like China and India emerge, it will be increasingly challenging for other countries to keep its competitive edge.

c) **Immigration**:
The UN projects that up to two million people will migrate from poor to rich countries every year until 2050. In this respect, societies either have to deal with immigration or emmigration, but in both cases with a big in-fluence on their TVET system.

d) **Labour Market Trends**:
The jobs of tomorrow, whatever they look like, will, on the whole, require new and higher levels of skills o rat least require different skills than before.

e) **The Impact of Technology on Education and Training**:
Technological developments and changes have had significant impact on societies, not only in ICT but also in biotechnology, medicine, materials and nano-sciences. Digital technology could become the single biggest lever for productivity and competitiveness in the near future.

Activity 2:

Give a brief statement to every of these five trends concerning their relevance to Pakistan.

2. Implications for the Future of TVET

If we in general agree to all or some of these trends stated in chapter 1, what does that mean for TVET? What implications for TVET or for the education system are conceivable?

Regarding the scientific discussion oft he last 20 years, the following implications are to be found.

2.1 Lifelong learning

It makes big difference if the society is getting older („aging society") or if it is a society with a high birth rate and a growing share of the population wants to be educated.

What is „lifelong learning"?

Lifelong learning is the continuous building of skills and knowledge throughout the life of an individual. It occurs through experiences encountered in the course of a lifetime. These experiences could be formal (training, counseling, tutoring, mentorship, apprenticeship, higher education, etc.) or informal (autodidacticism, life experience, etc.) Lifelong learning, also known as LLL, is the „lifelong, voluntary, and self-motivated" pursuit of knowledge for either personal or professional reasons. As such, it not only enhances social inclusion, active citizenship and personal development, but also competitiveness and employability.

Lifelong Learning is the provision or use of both formal and informal learning opportunities throughout people's lives in order to foster the continuous development and improvement if the knowledge and skills needed for employment and personal fulfillment. It shares mixed connotations with other educational concepts such as Adult Education, Training, Continuing Education, Permanent Education and other terms that relate to learning beyond the formal educational system. The ability to pass this knowledge and skills on from one person to another is very important.

Lifelong education means education resulting from integration of formal, non-formal, and informal education so as to create ability for continuous lifelong development of quality of life. Learning is therefore part of life which takes place at all times and in all places. It is a continuous lifelong process, going on from birth to the end of our life, beginning with learning from families, communities, schools, religious institutions, workplaces, etc.

Source: http://en.wikipedia.org/wiki/Lifelong_learning

Another definition gives an another, simple definition:

> *„Lifelong learning is seen as encompassing all purposeful learning activity, whether formal or informal, undertaken on an ongoing basis with the aim of improving knowledge, skills and competence"*
>
> *(European Commission, 2002, p. 7).*

In other words, we have to say good bye to the former approach that there are different phases in everybody's life:

  i. Upbringing within family

  ii. Schooling/Training

  iii. Working

  iv. Retirement.

In the old thinking each of these phases lasted a specific period before it was replaced by the next phase.

In modern world - which of course already has begun – these phases merge into each other. The effect is that we sometimes have to work while we attend a school or a training programme and that we have to be trained when we are working to earn our living. As so often in life, this phenomenon has both positive as well as negative effects.

Activity 3:

Think about the merging of phases in most people's lifes that was briefly outlined: What positive and what negative effects might occur? Please list at least two effects for each.

Regarding all this, we can have a look at the implication this "shift" has on the way people are used to and have to learn. In other words: this "shift" effects our way of learning.

Traditional learning	**Lifelong learning**
The teacher is the source of knowledge	Educators are guides to sources of knowledge
Learners receive knowledge from the teacher	Educators serve as facilitators for the student's acquisition of knowledge
Learners work by themselves	People learn by doing, or Action Learning

Tests are given to prevent progress until students have completely mastered a set of skills and to ration access to further learning	People learn in groups and from each other
All learners to the same thing	Assessment is used to guide learning strategies and to identify pathways for future learning
Teachers receive initial training plus ad hoc in-service training	Educators develop individualized learning plans
"Good" learners are identified and permitted to continue later education	Educators are lifelong learners. Initial training and ongoing professional development are linked
	People have access to learning opportunities over a lifetime
	Learning is put into practice
	Learners reflect upon learning and analyze their personal development

2.2 Shift from institutions to individuals

In the scientific literature you can find the phenomenon of „blurring of the boundaries of learning". In principle this means that people increasingly learn more outside of schools (or other educational institutions) than they learn inside schools.

In the international discussion of trends in education, we just have started to take this trend seriously. Probably you already have heard about „Recognition of Prior Learning" which tries to find out how we can formalize (in terms of formal credentials) these qualifications or competences people have acquired in their „normal" working life outside of any educational institution.

So, in fact, education/training/learning outside schools becomes more important. But what does that mean to teachers, trainers, educators?

2.3 The increasing importance of generic and transversal skills or „key qualifications"

The term „key qualifications" was shaped first in the 1970's by Dieter Mertens. He understood the qualifications, which can serve as "keys" for the development of fast changing specialized knowledge by key qualifications.

According to many definitions to be found in the scientific s´discussion key qualifications are:
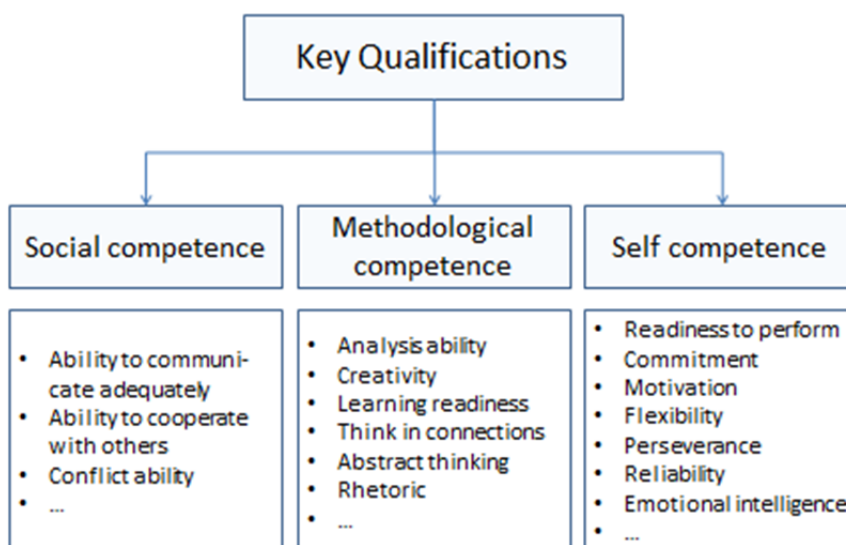

Key qualifications

"The acquisitionable general abilities, attitudes, strategies and knowledge elements, which are with the solution of problems and with the acquisition of authority in as much as possible contents ranges from use, to become fair so that a capacity to act develops, which makes it possible, both for individual needs and social requirements."

Key qualifications can be subdivided as abilities (in a possible categorization) into three areas:

- Social competence
- Methodological competence
- Self competence

The following graphic gives an overview on the areas oft he key qualifications and their respective abilities.

Key Qualifications

Social competence	Methodological competence	Self competence
• Ability to communicate adequately • Ability to cooperate with others • Conflict ability • ...	• Analysis ability • Creativity • Learning readiness • Think in connections • Abstract thinking • Rhetoric • ...	• Readiness to perform • Commitment • Motivation • Flexibility • Perseverance • Reliability • Emotional intelligence • ...

Activity 4:

Identify 6 different key qualifiations that are important for your students in their specific trade/occupation.

3.   Learning Theories

Whenever we speak about learning and teaching we should think about how we can assure that the student is going to learn what the trainer or teacher indends to.

> **Learning** can be defined as a competency-building acquisition of knowledge, abilities, and skills.

There are many „types" of learning:

Learning not only takes place deliberately (**intentional learning**), but also casually (**functional** or **"en passant" learning**); not only in the institutionalized context of school, training, university, etc. (**formal learning**), but also in practical life (**informal learning**). Many international studies have found that informal learning makes up 60-80 percent of the total skills acquisition (e.g., OECD 1977). Learning is therefore not primarily an institutionalized practice, but rather a way of life.

Against this background, not all of the learning theories presented in the following paragraphs are adequate. We have to find out what we can learn from these theories and how they fit to our own teaching experiences.

> „**A learning theory** is an attempt to explain how learning occurs. Clearly, the process of teaching (expediting learning) should be facilitated ifo ne understands how learning how learning occurs and the implications oft hat knowledge for teaching" (Wolery et al. 1988, p. 4).

Rolf Arnold (2011, p. 11 ff) gives a overview of three learning theories:

In a rough differentiation, behaviorist, constructivist, and cognitive, as well as subject-scientific learning theories can be categorized. These theories are either more object-oriented (in view of what is to be acquired), or subject-oriented (in view of competence-building) and have different explanatory strengths for different complexity levels of learning. For example, easy language learning programmes (e.g., vocabulary training) can be planned and designed to a large extent based on behaviorist learning theories, whereas these theories have a limited suitability for explaining the development of complex problem-solving skills or key qualifications.

The **behaviorist learning theories** assume that people can build and change their behavior patterns with stimulus-response conditioning: "Learning accor-

ding to the principle of classical conditioning is based on contiguity (temporal coupling) by a definite and neutral stimulus". This means that positive consequences (amplifiers, such as recognition or praise) lead to a consolidation of appropriated and exhibited behavior, while a lack of confirmation, or even negative consequences have reverse consequences. On closer examination, however, it becomes obvious that the behaviorist learning theory only has a limited explanatory value and that is also why it has only been attributed very limited practical relevance up until today (e.g., in the instructional design approaches of modern multimedia learning). Robert Gagne has already pointed out that the stimulus-response learning was only one of many forms of learning by which people acquire information and develop skills.

He identified a total of 8 forms of learning: 1. signal learning, 2. stimulus-response learning, 3. learning motor chains, 4. learning linguistic chains, 5. learning of distinctions, 6. concept formation, 7. rule learning, and 8. Problem solving.

Cognitive learning theories assume that learning should encompass the entire context of a series of behaviors. If "thinking" is seen as "the ordering of the doing", then learning, through which problem solving-oriented knowledge and appropriate skills are developed, could also be understood as a comprehensive process in its planning, implementing and controlling sequence of actions. The cognitive learning theories emphasize problem-solving, insightful, and deductive learning and, are therefore particularly suitable for explaining more complex learning processes such as those found in vocational education (but also in higher education) in the development of comprehensive key qualifications. In these learning processes, learning not only takes place through the acquisition of the new (assimilation), but also by the application, restructuring, and further development of already existing cognitive structures (accommodation). The determining factor taken into consideration for learning and educational processes here is not only the ratio of external stimulus to response (...), but also, the internal control mechanisms such as **self-reflection**, **selective perception**, **cognitive strategies**, **ideas** and **desires**.

Constructivist learning theories assume that cognitive systems are closed self-organized systems, which are self-referenced and autonomous. Learning cannot be understood as a process in which information can be transported "from outside to the inside," it is seen much more "as a process of restructuring within a closed system". **Teaching can therefore not create stores of knowledge in others or develop skills, it can only initiate and enable restructuring or acquisition processes.** In this sense, H. Siebert stated: "It cannot be externally controlled or determined, but only initiated and 'perturbed' (disturbed). Even the audience of a lecture cannot reproduce what has been heard – like a tape recorder – rather, the lecture initiates individual thoughts, associations, emotions, and

considerations that are only loosely connected with the lecture". The constructivist learning theories are the expression of a changing trend in the psychology of learning: "Learning is no longer seen as an individual information acquisition and behavior change, but is involved in the complex relationships between biological factors, socio-cultural involvement and emotional and motivational processes. Under such a multi-perspective view, it presents itself more and more as "knowledge construction": learning refers more to the development of knowledge and skills based on 'biological readiness', individual experiences, and existing knowledge structures, which are useful and usable in real situations. New information is linked with previous knowledge, interpreted based on the background of one's own experience and networked, which empowers action in specific situations".

This multi-perspective view directs the learning theory debate towards knowledge management in collaborative relationships. Sharing, further development, and updating of knowledge essentially presupposes that learning is placed, in the sense of involvement, in activity and application contexts. At the same time, sustained learning can result if the learning subjects play an active-interactive role in the learning process and contribute their own experiences, questions, and insights to the development of solutions to problems. Individual and organisational learning appear as the two mutually supporting sides of knowledge management.

Activity 5

This chapter seems rather theoretical. But finally we want to learn from theory to improve our practical work. Please think of different ways how you have learned certain skills, knowledge and attitudes from beeing a child until today. Is there any connection to the described learning theories? Have you learned certain skills, knowledge and attitudes in different ways?

Please describe at least two different ways/examples of your personal learning experience.

4.   Factors of Teaching

The majority of researchers and educational scientists nowadays regard the way **how** people learn as more important for the acquisition of key competences than the content (**what**) they learn.

In other words: if we as trainers, teachers, instructors want to train key qualifi-cations, we have to use appropriate methods.

Furthermore teachers must have an expertise to arrange their session according to the desired outcomes. What they can arrange, is the interaction of the different factors that determine the teaching-learning process. These factors are:

- target group (with their expectations and characteristics)
- topic (with its incitement content)
- objectives
- methods
- media
- ways to control the learning success, etc.

The technical term for these factors is "didactics".
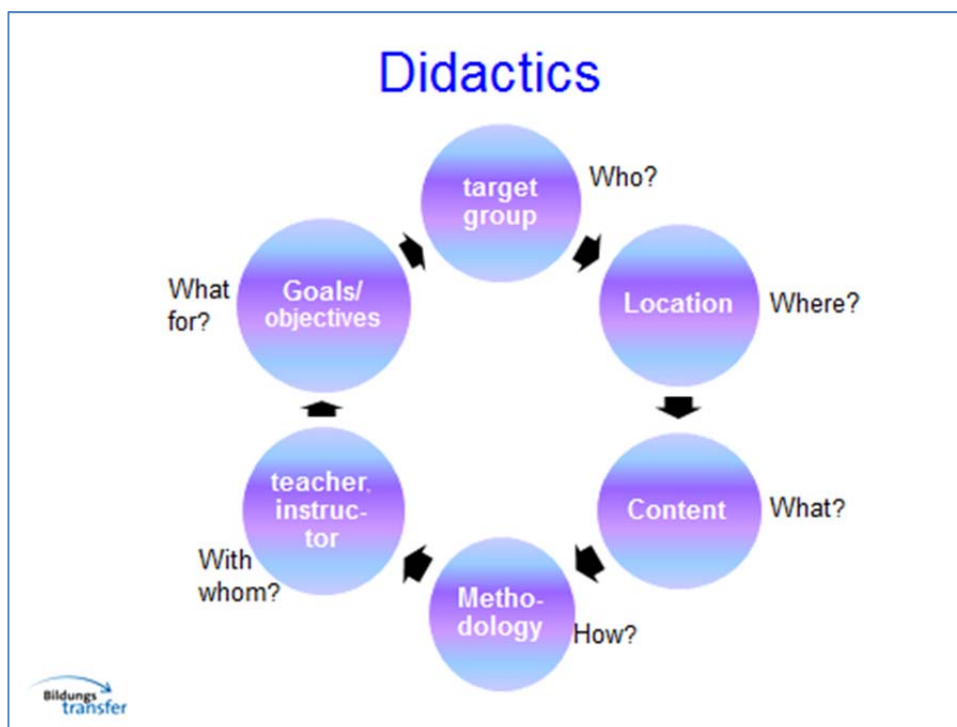
These factors are closely interrelated. The decision in one area, determines the needs and opportunities in other areas.

The planning of a learning unit is based on the results of the didactic analysis and the condition analysis. This means that teachers must first obtain clarity on the conditions of the participants and analyse the topic didactically, before they proceed

to making didactical decisions directly relevant for the implementation. In this implementation plan, the issues of structure and arrangement, i.e. the issue of the steps and "learning structure" are in the foreground.

5. Why are Teaching and Learning Methods so Important?

In the previous chapters you have read about several reasons why we should concentrate on teaching methodology in order to cope with the rapidly changing economic and technological situation. The world outside of school is changing, so the practice inside schools must change as well.

The following list is a collection of reasons why we must apply modern methods:

- changing job requirements

- existing gap between the world of work and the world of educartion

- need to align learning objectives to social needs

- globalization generates new demands in education

- the emergence of knowledge society

- the overall trend to „lifelong learning"

- the growing importance of generic skills.

This list could be easily continued.

One of the obvious conclusion is that students must gain generic skills or key qualifications, such as problem-solving skills, communication and co-operation skills etc. **in addition to** their technical skills.

The result is that teachers and trainers need to ensure that students will be trained or educated in a comprehensive sense; they need to be trained in generic **and** job-specific technical skills to be able to cope with the demands in working life.

The most important key to train both different competencies (technical and generic) is the application of appropriate teaching and training **methods**. We must shift from the existing „teaching culture" to a „learning culture" (Arnold 2011). In other words: we must emphazise and support the learning process more than the teaching process to prepare students for the world of work.

It is almost undisputed that humans can learn to act independently and comprehensively in their job, when they have learned to act accordingly already during their education and training.

In other words: we must say good-bye to „chalk & talk"!

> „Shifting the emphasis from teaching to learning can create a more interactive and engaging learning environment for teachers and learners. This new environment also involves a change in the roles of both teachers and learners. The role of the teachers will change from knowledge transmitter to that of facilitator, knowledge navigator and sometime as co-learner. The new role of teachers demands a new way of thinking and understanding of the new vision of the learning process. Learners will have more responsibilities of their own learning as they

seek out, find, synthesize, and share their knowledge with others" (Majumdar 2011, p. 4).

This shift in teaching and training implies a different understanding of the respective role as teacher/trainer and student (ibid.):

Changes in Teachers' Roles	
from	**to**
transmitter of knowledge	guide & facilitator
controller of learning	creator of learning environment
always expert	collaborator & co-learner
learning to use ICT	using ICT to enhance learning
didactive/expository	interactive/experiential/explanatory

| Changes in Learners' Roles	
from	**to**
passive learner	active learner
reproducer of knowledge	producer of knowledge
dependent learner	autonomous learner
solitary learner	collaborative learner
solely learning content	learning to learn / think / create & communicate

It is important not to take any new method and apply it as it was applied somewhere else in another context. It is very important to **adopt these methodos in a critical sense**, which means to take into consideration the respective context (e.g. in a certain TVET institution) and the respective target group. Probably you have to modify the method and adapt it to the circumstances.

6.   Basic Principles of Teaching

Before we come to different teaching or training methods we should think about basic or general procedures in teaching which are common to all methods.

6.1   Motivation of Learners

One of the most important issues is the motivation of learners. In TVET – more often than in general education – we have to make sense to what students have to learn. Motivation is the first step towards the learning success.
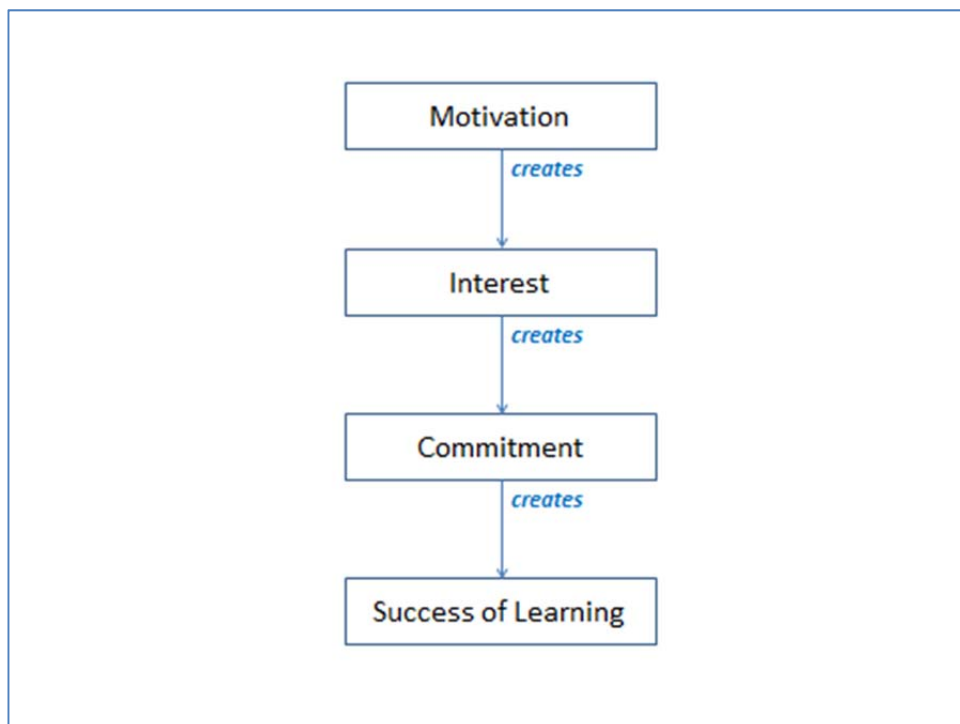
The Importance of Motivation

Researchers have identified those aspects of the teaching situation that enhance students' self-motivation (see B. Gross Davies, University of California 2002: http://teaching.berkeley.edu/bgd/motivate.html).

To encourage students to become self-motivated independent learners, Teachers and trainers can do the following:

- Give frequent, early, positive feedback that supports students' beliefs that they can do well.
- Ensure opportunities for students' success by assigning tasks that are neither too easy nor too difficult.
- Help students find personal meaning and value in the material.
- Create an atmosphere that is open and positive.

- Help students feel that they are valued members of a learning community.

Research has also shown that good everyday teaching practices can do more to counter student apathy than special efforts to attack motivation directly. Most students respond positively to a well-organized course taught by an enthusiastic instructor who has a genuine interest in students and what they learn. Thus activities you undertake to promote learning will also enhance students' motivation (ibid.).

6.2 How to structure a learning unit

Another very important issue is „structure"! The graph below gives an rough idea about the importance of structure.
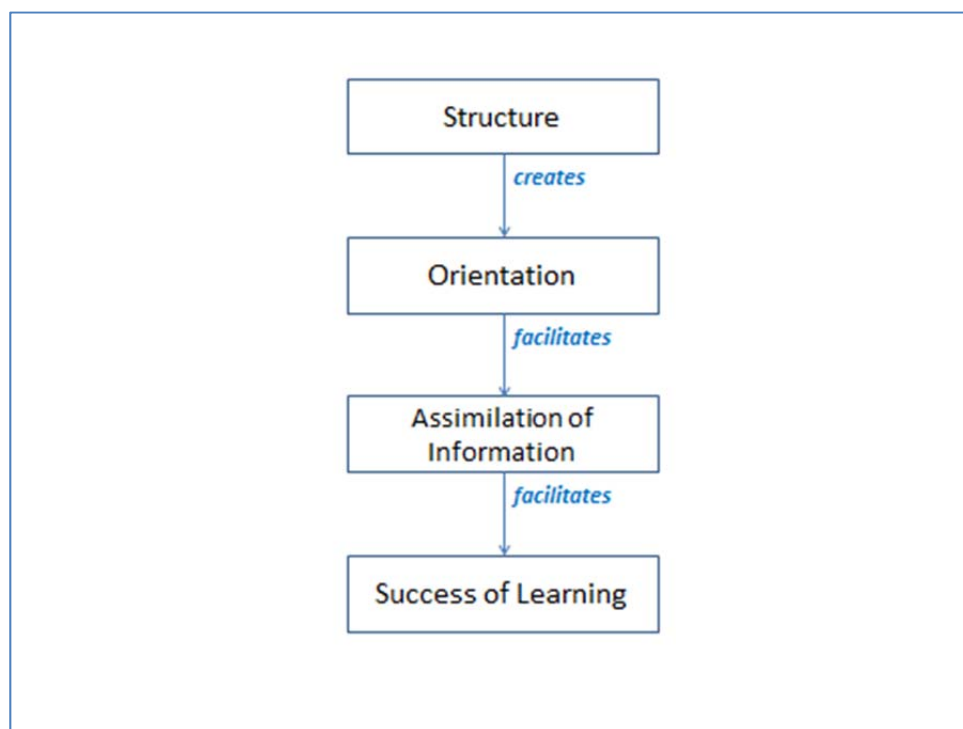
The Importance of Structure

Without reference to different training and teaching methods, we should think about an **overall structure of a learning unit**. This learning unit might be a lesson or a specific part of a lesson to achieve certain learning objectives.

The following table gives an overview of eight phases of a learning unit with its' purposes and particular characteristics.

No.	Phase	Purpose	Characteristics
1	Introduction	- Start of the unit - Motivation of learners - To raise interest of learners - Explanation of the task(s) - Explanation of the (learning) objectives	- Involvement of learners e.g. through a brainstorming - Distribution of materials - Collection of previous knowledge of learners
2	Information	- Provision of needed information	- Explanation by teacher/ trainer - Analysis of cases, models, examples concerning the learning content
3	Formulation of the task or the problem	- Clear definition of the task/work to be accomplished by the learners	- Information about how the work/task should be carried out
4	Planning	- Planning and organising of the steps of the procedure to solve the task, how to use what kind of equipment, and how much time should be used (deadline)	- Work planning and organisation - Expected criteria the solution of the problem or task should fulfill
5	Implementation	- Implementation of the task and revision of the result	- Implementation according to work/operating instruction
6	Evaluation	- Control and evaluation of the success of the deliverables and work procedures	- Both learners and teacher/ trainer evaluate the result after clarification of the respective criteris
7	Transfer	- Ensuring that the learned knowledge and/ or competences can be transferred to other similar issues and situations	- Learners are able to apply the newly learned knowledge and/or competences within other situations
8	Review	- Comparision of the achieved solution/task with the intended objective	- Final discussion of the task and the results - What was good? - What should be improved next time? - How can we deal with similar problems? - etc.

There is no need to follow exactly these 8 phases of a learning unit. Often two phases are merging into each other. But we regard as important, to think about the specific purposes of these phases which help us to implement an appropriate or a „modern" methodology in accordance with interaction, participation and motivation to train the learners both technical and generic skills. At the same time these phases are serving as scaffolding and give guidance to the teacher or trainer.

# 7.   Decisions of a teacher while preparing a lesson

Teachers and trainers have to arrange the interaction of the different factors that determine the teaching-learning process. These factors are:

- the target group (with their expectations and characteristics)
- the topic (with its incitement content)
- the objectives
- the methods
- the media
- the tools for evaluation, etc.

These factors are closely interrelated. As in „a mobile" the decision in one area, determines the needs and opportunities in other areas. The "mobile" illustrates the inter-dependence of all aspects.
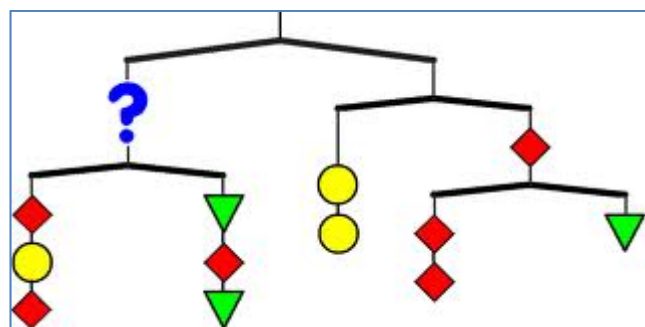

A Mobile
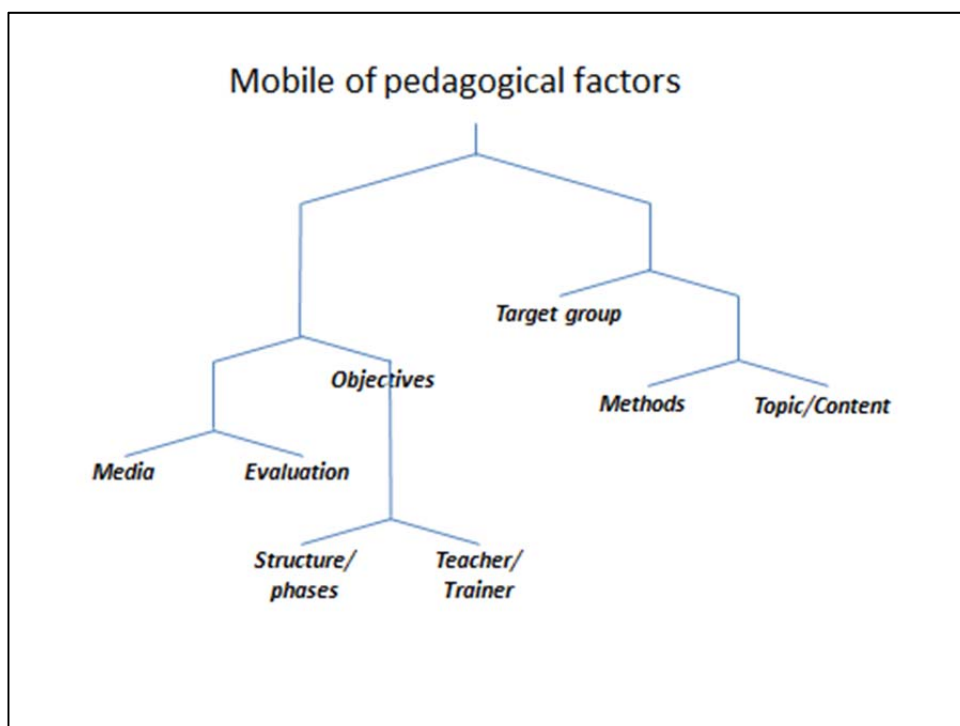
8. Training Methods

This section of the module provides you with the explanation of different training or teaching methods which are interactive, participative and motivating in order to enhance the learning success. As described above – not every method is suitable to every topic or learning objective. We carefully have to select the method which is appropriate to the desired learning outcome.

8.1 Types of Training Methods
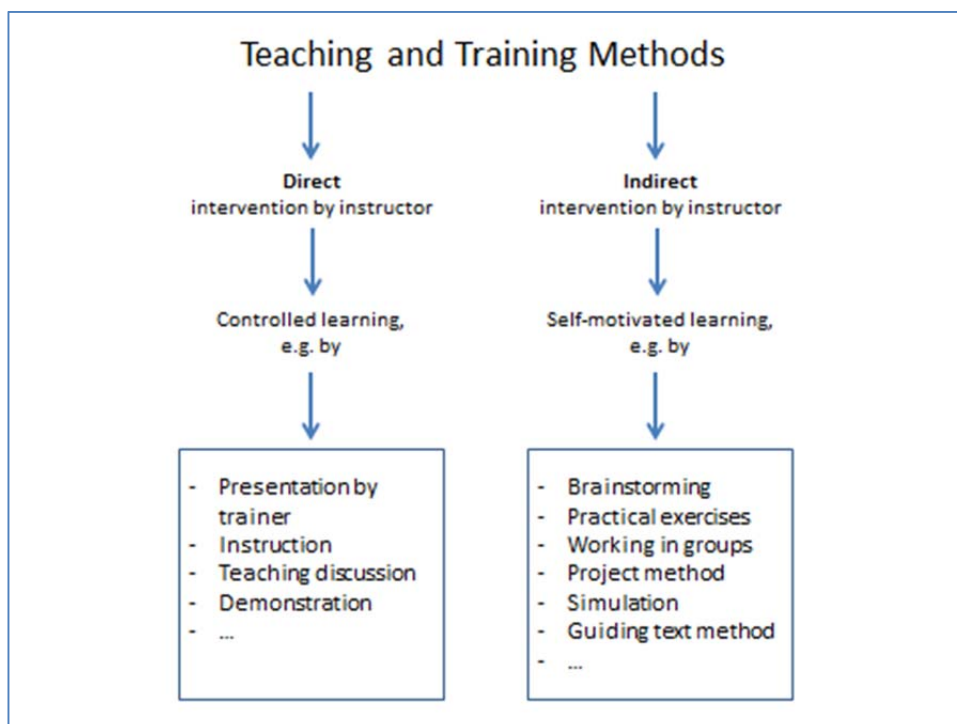
Classification of teaching and learning methods (Klein 1994, p. 39)

In the following paragraphs we concentrate on methods which support „self-motivated learning" and which are indirectly controlled by the teacher or trainer.

8.2 Brainstorming

Brainstorming usually generates a large number of creative ideas. It consists of processing student's spontaneous ideas about a pre-set theme or topic It can be used to identify and determine causes of problems, development of solutions and the implementation of these solutions.

Procedure:

a) Describe the topic and records on the blackboard.

b) Give a brief summary of the rules of a brainstorming session.

c) Let the group generate ideas for some minutes and let each member write it down.

d) Collect all ideas and present them on a pinboard or on the blackboard.

e) Don't rush to interrupt the flow of ideas.

f) Stop the process if there are no more ideas and if enough ideas are available.

g) Clarify each idea.

h) Analyse the results/ideas and decide together with the group which items can be combined to get meaningful clusters of similar ideas.

Rules:

- No criticism of any ideas

- Encourage exaggeration

- The more ideas the better

- Record all ideas

- Everybody participates and every idea is important

- Speed is important.

Examples of application:

- To introduce new subject matters/topics

- To recall students' previously acquired knowledge

- To identify problem solving alternatives

- To search for ideas

- To stimulate/prepare students for a new topic

- ...

8.3   Group work

Focused both on participants and tasks, group work can be an ideal way of including a social element in learning specific topics.

Students learn best when they are actively involved in the process. Researchers report that, regardless of the subject matter, students working in small groups tend to learn more of what is taught and retain it longer than when the same content is presented in other instructional formats. Students who work in collaborative groups also appear more satisfied with their classes. See B. Gross Davies, University of California 2002: http://teaching.berkeley.edu/bgd/collaborative.html).

Procedure:

1	**Plenary session**	- Group work tasks should be explained, using precise terms backed up by any combination of visual and memorization aids – such as a blackboard or flipchart or group work hand-outs. - Form the groups and explaine the way that groups are to be formed (e.g. by random selection) - Explanation and discussion of what is expected in the group presentation of results. - Clarification about the duration of the group work and about other conditions (location etc.).
2	**Group Work**	- The participants carry out tasks while the teacher/ trainer ensures that the group does not wander away from the topic. If necessary, the moderator can offer encouragement and additional information as well as suggesting ideas. - The group work should be considered complete when concrete and certain results have been obtained and when these are ready to be presented in the plenary session.
3	**Plenary session**	- Each group should present its problem solving alternatives in the plenary session. - The order of the presentations should be pre-set. - Once all the presentations are completed, the different results should be compared and submitted to critical analysis. - Finally, a summary of al the results should be drawn up.

Rules:

- **priority given to technical aspects**
  While group work can generate a good working atmosphere for collective learning, it is important to ensure that technical aspects remain at the forefront at all times.

- **good pre-preparation**
  It is often and erroneously assumed that group work "functions on it own". However, for teachers and students alike to feel satisfied with their work a good pre-preparation is essential. In this context, the following are extremely important:

  - ➢ Appropriate working materials

  - ➢ A precise and concrete explanation of the tasks to be carried out

  - ➢ Sufficient motivation for the presentation of results

  - ➢ Don't forget time management!

- **taking account of key areas**
  During the phases of conclusion and evaluation, attention should be given to all key areas, with discussion of the results of all the work-groups (comparison, interpretation). A good summing-up session is always essential.

Examples of application:

- to enable participants to move from a passive/receptive attitude to an active and productive participation in group activities

- to practice, strengthen and apply knowledge and skills

- to independently analyse data situations, etc.

- to present new subject matter

- to elaborate role-plays, role-simulation-plays,

- ...

8.4   Simulation – Role playing

This is a method which simulates social conflicts and group interest decision making. The subject/conflict/problem and the roles/situations are pre-set and the outcome is left open. During the role play/simulation, learners have to take decisions based on real or hypothetical model situations, defined by a set of rules that govern the situation. This strategy is especially valid for social learning centred around not only knowledge acquirement but also on the development of skills and attitudes that can enable students to make the step from theory to practice through real life application of the simulated situations.

Procedure:

1	**Preparation**	- Presentation of the content and rules of the simulation. - Allocation of the roles to be assumed by each group. - Presentation of the initial situation, written description of the characteristics of the groups participating in the game and, if necessary, the allocation of roles within each group. - The game commences applying the assigned roles.
2	**Implementation**	- The groups discuss with each other a common objective (objectives, recourses) and take the corresponding decisions. - The decisions taken are put into practice, following the established plan. - Feedback/comments are obtained from the game's director or from the other groups. - If necessary, the process can be repeated, changing the original conditions or simply continuing until a pre-set result is obtained.
3	**Evaluation**	The game's director should ask the learners to reflect on the results obtained, answering for example the following questions: - Which of the solutions seem most feasible? - What problems came up during the game? - Was the game in tune with reality? - What parts of it might be applied to other situations?

Rules:

It is very important that the rules of play are clearly formulated, for example:

- The initial situation and the rules of the simulation should not be modified.
- The simulation's director (teacher/trainer) should open and close the role playing.
- Questions should be directed to the simulation's director throughout the process.
- The simulation's director should be careful to respect the rules of play.
- The simulation's director should be well acquainted with the reality of the situations and roles represented, if necessary, regulating play and participating actively in the process.
- If necessary, the simulation's director should suggest pausing the game at certain points in order to stimulate reflection.

Examples of application:

- As an instrument to be used for the making of decisions related to a specific process or problem

- to apply what has been learned (experimentation)

- to implement "action skills"

- to facilitate theoretical-practical integration through applying simulated situations in a "real world" environment.

8.5 Project method

The project method is one of the most advanced methods to train students in a similar situation as to be found in the real world of work.

The central idea of the project method is that a group of students analyze and develop a "reallife" problem or tackle a present day topic within a preset time limit, working independently and with the division of tasks clearly defined.

The topics selected for the implementation of the project should be directly linked to specific areas of responsibility or tasks according to normal duties in a certain profession.

In principle, the project method can be applied to each "real-life" problem or task, always taking account of the fact that the main objective or function of the project should be linked to the carrying out of practical tasks. It is precisely this replacing of passive/receptive with active/situational experience based learning models that forms the nucleus of activity based vocational skills learning.

The project method cannot be named as a simple teaching-learning model, because it goes much further than curricular limitations.

Procedure:

1	**Informing**	**familiarizing students with the project method:** - The trainer's first task is to make sure that sudents are familiarized with the project method and – with full group participation – that the themes or areas to be dealt with are appropriate. **compiling the necessary information:** - In the first phase, students should compile the information needed to solve the proposed problem or task, making use of available sources of information, such as technical textbooks, specialized publications (e.g. magazines), manuals, videos, etcetera. **high level of identification and motivation:** - Project objectives/tasks should be defined in accordance with students' experience and carried out with the participation of all group members, to ensure a high level of identification and motivation. **encouraging collaborative work:** - The project method represents a great opportunity to train working in teams in the search for common solutions to a proposed problem. Successful teamwork requires a cordial atmosphere and an

		open climate. It is therefore extremely important, especially during this initial stage, that trainers be able to direct and advise, to encourage the students, etc. – as many students will often be unaccustomed to group or team-work.
2	**Planning**	**adapting or changing** - The planning phase is characterized by the setting up of the work plan, the structuring of the methodological procedures and the planning of the tools and resources to be used. It should be stressed that simply preparing the work plan does not always guarantee that this will be correctly implemented. It is therefore necessary that the planning phase be extended throughout the project. During the planning phase, the division of tasks between group members should be clearly defined.
3	**Deciding**	**collective decision-making involving trainer and group members** - Before beginning the practical work phase, students should take group decisions about the alternative or problem solving strategies to be pursued. Once a course of action has been collectively decided upon, this should be discussed with the trainer, to ensure that every member agrees to strategies or procedures. **learning to evaluate problems** - During this decision making phase, the role of the trainer is to comment on, discuss and – if necessary – modify the problem solving strategies proposed by students. It is important that students learn to evaluate the potential problems, risks and advantages presented by each possible alternative. **social communication process** - One of the foundations of projects based learning is the social process of communication established within the group, that permits students to take decisions collectively.
4	**Imple-menting**	**activities based on experience and investigation** - In the implementation phase, activities based on experience and investigations take precedence. Creative, independent and responsible activities are carried out and analyzed. Each member of the project should perform his or her tasks according to the agreed workplan or division of work. **the feedback process** - During this phase, partial results are compared with the initial work-plan and any necessary modifications made at both planning and execution levels. This process of feedback enables partial results to be revised and serves as self-control and evaluation tool for both individual and group. **carrying out tasks as independently as possible** - Tasks should be carried out as independently as possible, although this does not imply that students have the feeling of being alone. Students encouraged to correct their own mistakes will learn as a result but will generally also require expert guidance from their trainer. The trainer must always be there for his students, assuming a directly participative role whenever advice or supports are needed – as well as, of course, being a motivator at all times. This motivational role includes a social and emotional side, which is very important to the students, who will expect a trainer to acknowledge a task well done.

5	Con-trolling	**the self-controlling phase** - Once a task has been completed, students should move into a self-controlling phase, where they can learn to better evaluate the quality of their own work. Here e.g. questionnaires similar to formal exams are often used, enabling students to discover and – if possible – correct any mistakes they may have committed during the implementation of the project. - During this self-controlling phase, the trainer should assume the role of advisor or support-person, participating directly only if and when students fail to reach agreement over the evaluation of their results.
6	Evalua-tion	**collective discussion of results** - Once the project is complete, a final discussion should be conducted, in which trainer and students collectively discuss and comment on the results obtained. The trainer's main role is that of a facilitator, allowing students to conduct feedback – related not only to the final product but to the whole process – and to define any mistakes committed plus qualify the results obtained – with regard to what has actually been achieved and what was originally expected. The feedback should also include the effectiveness of the work carried out and the personal experiences gained, as well as considering group dynamics and processes. Students should then formulate proposals for the improvement future projects. This final discussion can also function as an important source of feedback for the trainer himself, who should also optimize the planning and execution of future projects. **the trainer's role** - The trainer's role moves from that of a "teacher" simply transmitting knowledge and skills, to one of a „learning process advisor, coordinator and support-person". The trainer starts, organises and stimulates the learning situations. The student is led towards self-learning and motivated to plan independently and collectively, and to implement and evaluate the learning process.

Characteristics of the project method:

1	**Related to real situations** The proposed tasks and problems should be directly related to "real-life" situations inherent to the selected occupation.
2	**Practical relevance** The proposed tasks and problems should be relevant to practical areas of the selected occupation.
3	**Students based approach** The selected project theme and its execution should be focused on the interests and needs of the apprentices.
4	**Product based approach** The results obtained should be both relevant and beneficial, being made available to others for evaluation and criticism.

5	**Action based approach** Apprentices should carry out specific activities independently, on both intellectual and practical levels.
6	**A holistic-integrated learning process** The project method should combine cognitive, affective and phsycomotive (all these are included as objectives).
7	**Self-organisation** The defining of objectives, planning, implementation and control should in the greater degree be the responsibility of the apprentices themselves.
8	**Collective implementation** Apprentices should learn and work collectively during the implementation out of the project.
9	**Interdisciplinary nature** The implementation of the project should enable different areas of knowledge subjects and disciplines to be combined.

These are only four of many, many available methods. In selecting just these methods, I wanted to give a brief overview of more simple methods (e.g. brainstorming) as well as more complex methods (e.g. project method) but both with the intention to be suitable not only for the acquisition of technical skills but also for the acquisition of generic skills.

Activity 6:

In chapter 4 different training methods have been outlined. Please think of these methods and what topics and learning objectives these methods would fit.

Method	Appropriate subject matter	Learning objectives to be achieved using this method
Brainstorming		-
		-
		-
		-
Group Work		-
		-
		-
		-

Simulation		-
		-
		-
		-
Project Method		-
		-
		-
		-

9.   What is good teaching?

In this chapter we shall attempt a first approach on what "good teaching" or „good instruction" means. Every teacher or trainer very likely has his own ideas and experiences, which he or she associates with "good teaching".

What factors can be seen as components of "good teaching"? Is it the teaching approach, the manner of teaching, the class atmosphere, or the results?

In determining the quality of teaching, one often refers to the structuring of the teaching, the methods used or the class climate. **Good teaching is what takes place in the classroom and what is observed, measured and what can be evaluated**. Very often the ideas about the ideal classroom are based on certain steps and procedures during the teaching process and certain respective rules. Monitoring and evaluation sheets for the classroom, as used for example in many countries in the teacher training, are based on this approach. Using checklists one can judge whether the teacher teaches well. However, this approach is not entirely satisfactory. What effect the teaching has on students, whether they learn what they are supposed to learn, cannot be clarified or evaluated by this approach. Based on this, we can say that good teaching is teaching that brings good results, from which the students **also achieve good learning outcomes**.

If I want to investigate teaching quality, I would therefore rather examine these results than monitor the teaching event with observation sheets or checklists.

What is good teaching?	
A	Good teaching is what takes place in the classroom and what is observed, measured and can be evaluated there.
or	
B	Good teaching is teaching that brings good results, from which the students also achieve good learning outcomes.

While the first variant of the determination or quality teaching focuses on the **implementation** (=throughput or process), the second variant focuses on the **output**. Both approaches have their advantages and disadvantages.

Throughput Approach (Process Approach):
Good teaching to be defined and investigated as „teaching done well" has the advantage that the necessary instruments and procedures are usually available and can be used easily. In many countries, for example, evaluation forms and checklists are available with which lessons can be observed and assessed. However, it remains open whether a teaching session rated as "good" actually really leads to good performance of the students or whether a session rated as "poor"

leads to poor performance. The dissemination of assessment sheets and check-lists, particularly if they are used in teacher training will lead to a certain type of standardisation. In principle this is good, but it ignores the assessment of the desired outcomes of a teaching session (Höffer-Mehlmer 2009, p. 3).

Output approach:
Through the review of students' performance, an attempt is made to clarify what the throughput/process approach leaves open, namely the effects which are to be seen as results of the teaching process. What is crucial here are the results achieved at the end of the learning process. By what means these results are achieved and whether the teaching met specific guidelines and checklists, plays (in contrast to the throughput approch) no important role.

However, there are also legitimate objections to the output approach. The throughput/process approach gives teachers more or less clear guidelines by which they can shape their teaching. This is missing in the output approach. In addition it can also be argued that the achievements of students that are mea-sured with tests etc., cannot really be attributed to good teaching. Bad teaching with good students (good pre-educated, motivated and independent) can achie-ve good results, while good teaching under adverse conditions can result in a poor output. If the throughput/process approach is accused of ignorance in rela-tion to the results, the output approach must be accused of blindness in relation to the teaching.

Let us first consider the output model in its pure form. Here it is assumed that learning in the classroom and individual learning determine the learning perfor-mance. In the reverse case, I can draw conclusions in turn on the quality of teaching from the learning performance measured by tests. The correlations can be illustrated as in the following figure:
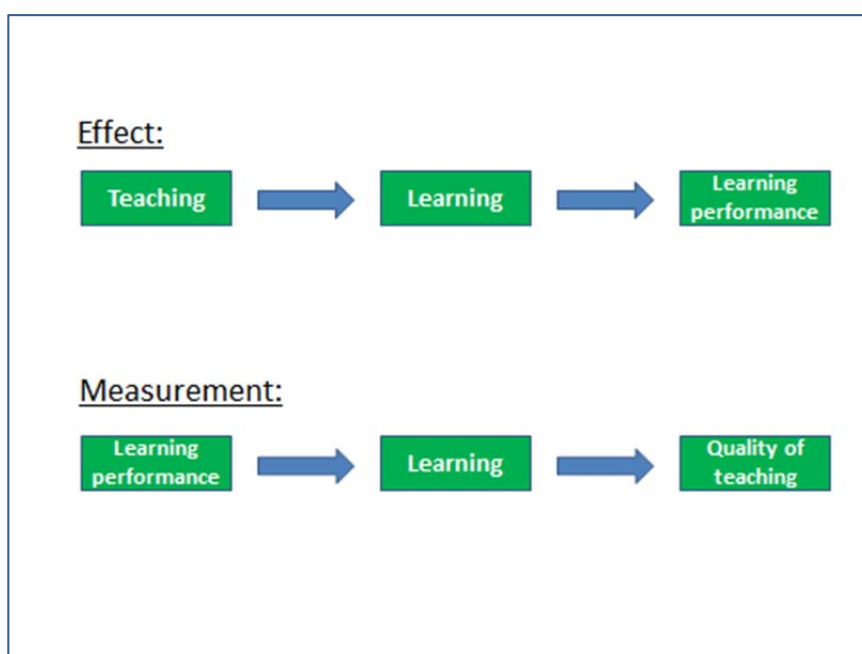
A procedure in which the output is used to directly draw conclusion on the teaching, would unfortunately not do justice to the complexity of teaching. Another – much more complex – model describes the learning performance as part of the „school performance". This figure shows the complexity of the teaching and learning processes with manifold influencing (organisational and personal) factors.

As teachers and trainers we are dealing with human beings and it is obvious that different students have different performance under the same conditions.
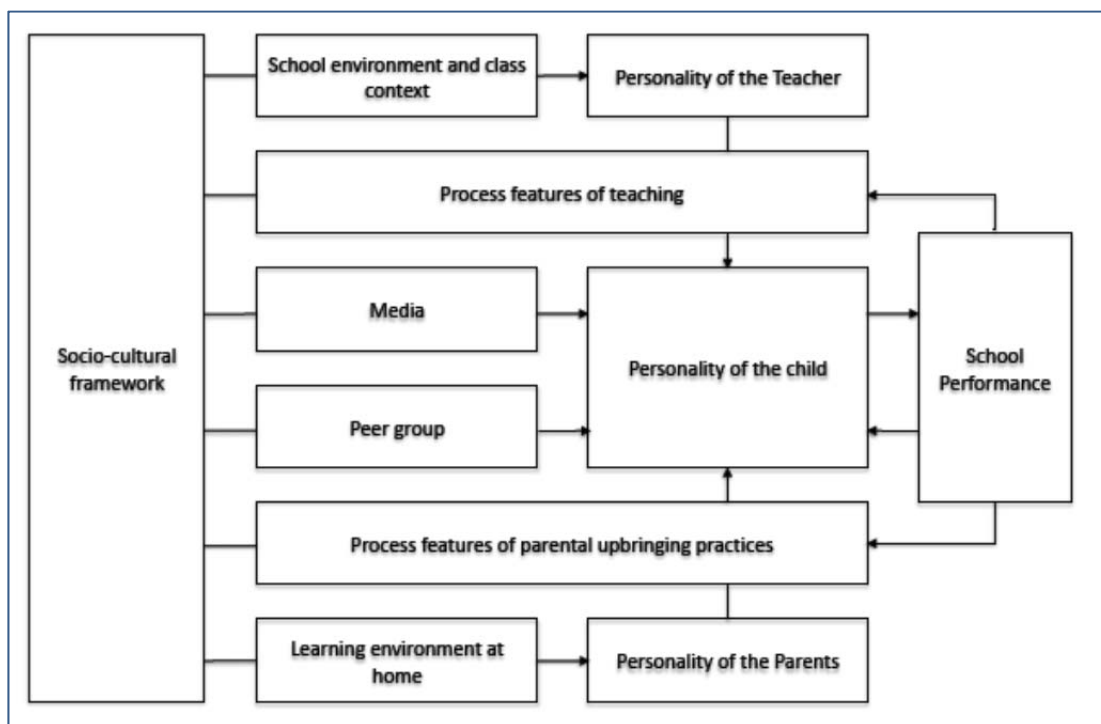
Source: Helmke 2003, p. 34

Even though we want to concentrate of the output or rather the learning performance, I just want to document the model of a German educational scientist who developped a model of the conditions of school performance:

Activity 7:

Please try to criticise the „output approach". What reasons and considerations are conceivable that might prevent the application of an „output approach"?

10.   Why is outcome orientation so important?

Usually, there are many different TVET institutions in a country. Sometimes curricula and training programmes are designed by a TVET-centre or sometimes on the level of the central government, without consulting enterprises. Very often final tests and assessments are designed and carried out by a TVET-centre. Because of this variety, training certificates issued by these TVET-centres are difficult to compare by potential employers. As an employer said: „These cardboards are colourful, difficult to interpret and rather useless".

To overcome this problem, many countries have introduced national competence standards, which provide one common standard for training and assessment all over the country. Usually these standards are combined in a **National Qualification Framework**.

National Qualifications Framework (NQF):

   1. Qualification
     - consists of competences, which are needed in an occupation or trade
     - is a new word for occupation, trade

   2. A NQF is a Framework or Matrix, composed of
     - economic sectors, sub-sectors and branches
     - different levels - from very simple to very complex qualifications and their
       respective competences

   3. Qualifications are to be found in the fields of the matrix
     - according to the economic sector, where they come from
     - according to their level of complexity

   4. Competences can also be organized in a matrix
     - national competence framework
     - is much more detailed
     - allows to detect overlapping of qualifications

As stated above, a qualification consists of several competences, an element of competence is subdivided into several performance criteria which form a detailed description of this competence. This description usually should come from the world of work and we as teachers and trainers (in the world of education and training) must implement it. The description of this competence may serve as „competence standard".

11. Categories of learning outcomes

At least three categories of learning outcomes can be identified depending on the function they fulfill in curricula, defining either the overarching goals of education and training, the learning outcomes of a study program or the learning outcomes of specific training units.

In some countries, learning outcomes are used in curricula to express the general goals of education and training. In this case, they are formulated in broad terms, neither occupation nor subject-specific. A prominent example of such kind of learning outcomes in TVET is offered by Germany, with the concept of **vocational competence** ("Berufliche Handlungskompetenz"). These terms express a holistic understanding of competence in TVET. They can be defined as an integrated capacity based on knowledge, skills, capabilities and experience to solve complex demands in work, learning, personal and societal situations. Vocational competence is predominantly described as a cluster of **technical, methodical, social and personal dimensions** integrating learning and methodological competences (see the concept of „key qualifications" in this module).

This definition is based on the „**concept of complete action"**, it includes autonomous **planning**, **performing**, **evaluating** and **reflecting** of occupational actions. The introduction of the concept of vocational competence has led to new forms of teaching/training and assessment (this concept has been the basis of the „Project Method" which has been described in module 2).
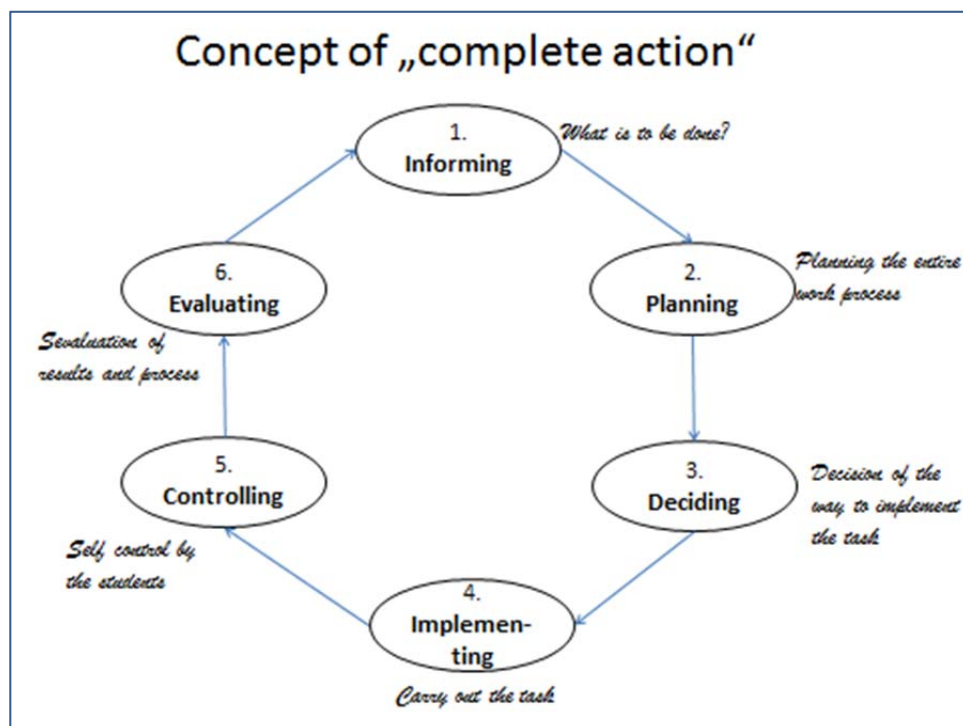
A second function of learning outcomes in curricula is to define the **specific competences, skills and knowledge** to be reached at the end of a study or training programme. This function is typically fulfilled by learning outcomes expressed in qualification standards. These standards provide the basis for final assessment and for the planning and implementation of teaching and training actions.

Finally, in some curricula learning outcomes are found at the level of units, where they express the **specific outcomes/objectives of single teaching units** and thus precisely determine the contents of training programmes. At this level, many countries have introduced outcome-oriented statements in their curricula (i.e. "what learner should know and be able to do").

It does not matter which type of learning outcomes we take; what is obvious at the end is, that the learning outcomes must be measurable.

The "Learning Outcomes Approach" focuses on **what the learner will do by the end of a lesson, a unit, or a course**. This is different from the more traditional approach where instruction is determined primarily in terms of **what content is taught**.

Key principles of the learning outcomes approach include the following:

- Curriculum design that determines course content, instructional delivery, and assessment techniques by identifying the knowledge, skills, attitudes and values needed by both learner and society.

- Learning outcomes generally include Generic Skills and are broken down to clearly express the specific skills and integrated abilities of a successful learner.

- Learning outcomes should clearly explain how learners will transfer their learning outside of the classroom setting.

- Learning outcomes are achieved through specific subject-area content skills that can be assessed in a relevant context (e.g. workplace).

- Authentic assessment of learning outcomes and subject-area content skills allows learners to self-assess, integrate, and transfer their learning.

This approach allows flexibility because learning outcomes can be achieved using a variety of processes and resources making instruction culturally relevant, characteristically holistic, and personally meaningful to learners.

(See also
http://www.aeei.gov.sk.ca/evergreen/lifeworkstudies/part2/portion02.shtml).

12. Learning objectives as first step towards outcome orientation

The smallest element in the big framework of qualification framework and competences are the learning objectives.

The selection of learning contents must be made with close reference to their practical application („orientation to activity"). That is the reason why learning objectives must always describe a certain application as well as it has to describe the content.

<center>Learning objective = Content + Activity</center>

Example of a measurable learning objective:

Correct:	Wrong:
„To turn a pin on a lathe"	„To know how a pin can be turned using a lathe"
to turn = **activity** pin = **content** lathe = **learning place**	pin = **content** lathe = **learning place** activity = **???**

12.1 What are good learning objectives or outcomes?

Learning outcomes have three characteristics:

    (1) The specified action by the learners must be observable.

    (2) The specified action by the learners must be measurable.

    (3) The specified action must be done by the learners.

A good test when writing a learning outcome/objective is whether or not the action taken by the participants can be assessed. If not, the objective probably does net meet all three of the characteristics.

Simple learning outcomes contain three elements:

    (1) who is to perform;

(2) what action they are to take; and

(3) some result that must come from their action.

How do you fix an unclear outcome?

Very often you can find learning objectives which are unclear or represent elements of curriculum rather than some action the participants will demonstrate. Note the following examples:

> *Participants will understand the nine reasons for conducting a needs assessment.*
>
> *Participants will develop an appreciation of cultural diversity in the workplace.*

If you ask the simple question "Can it be measured?", you see readily that these learning outcomes have shortcomings. They are hardly measurable. The same outcomes can be modified by changing the action verbs.

> *Participants will list nine reasons for conducting a needs assessment.*
>
> *Participants will summarize in writing their feelings about cultural diversity in the workplace.*

Learners now have a much better idea of what is expected of them.

What is the importance of action verbs?

Since the learner's performance should be observable and measurable, the verb chosen for each outcome statement should be an action verb which results in clear behavior that can be observed and measured.

Sample action verbs are:

> *list, describe, recite, write, compile, create, plan, revise*
>
> *analyze, design, select, utilize, apply, demonstrate, prepare, use*
>
> *discuss, explain, predict, assess, compare, rate, critique*

Certain verbs are unclear and subject to different interpretations in terms of what action they are specifying. Such verbs call for "hidden" behavior which cannot be observed or measured.

These types of verbs **should be avoided:**

> *know, become aware of*
>
> *appreciate, learn*
>
> *understand, become familiar with.*

(see Phillips 1994)

13. From learning objectives to educational or vocational standards

Educational and vocational standards articulate requirements for (school-based) teaching and learning. They identify goals for pedagogical work, expressed as desired learning outcomes for students. Educational/vocational standards thereby translate into concrete terms the educational mission of institutions offering education and training.

Educational standards draw on general educational goals. Vocational standards draw on vocational goals. They specify the competencies that schools must impart to their students in order to achieve certain goals, and the competencies that students are expected to have acquired by a particular grade or level. These competencies are described in such specific terms that they can be translated into particular tasks and, in principle, assessed by tests.

The standards can serve as a guide for schools and classroom instruction and give teachers and trainers a frame of reference for their work.

The development of educational standards involves:

> (a) decisions as to social and pedagogical goals,
>
> (b) scientific work, especially in the fields of subject didactics and psychology,
>   to determine the structure of competencies and
>
> (c) test development concepts and methods.

Educational standards translate the schools' educational mission into concrete terms for key areas of learning and thus gear teaching and learning towards shared goals.

Students benefit of this, because standards also help to improve the professional expertise of teachers and trainers and quality development on the institutional level. Translated into assessment programmes, standards are used for educational monitoring and the evaluation of schools. These serve to ascertain and assess learning outcomes.

Feedback and an output-related approach aim to examine the effects (and side effects) of teaching and instruction and thus to facilitate a professional, rational approach (see: Federal Ministry of Education and Research Germany 2004).

14.   Conclusion

The previous chapters draw a straight line from learning objectives to vocational (or educational) standards as core of an approach that emphazises the importance of learning outcomes.

In contrast, the older "curriculum-centered approach" put the focus on teaching, and the teacher or trainer determines what ought to be taught, when, how, and in what time frame. The curriculum that must be covered throughout the year takes precedence. These classes often require strict discipline because students' interests are considered only after content requirements are established.

In this framework students are compared with one another. Student success is judged in comparison with how well others do. A fixed standard of achievement is not necessarily in place. In these classrooms the distribution of grades can usually be presented as a bell-shaped curve.

The outcome-based (or vocational standards) approach specifies the minimum competencies that students should acquire by a particular grade or by a particular level of training. These competencies are described in specific terms, enabling them to be translated into concrete tasks and assessed through testing. Decisive in this concept are descriptions of the competencies that are acquired within a specific subject or area of study, and of their vari-ous dimensions and levels.

A specific example of an outcomes-based approach to curriculum development is the competency-based approach in vocational education, which focuses on the occupational competencies (skills) learners are expected to achieve, and the performance of those competencies. This approach will be explored in module 4.

Task

> Please check the ten characteristics of good teaching below. Do you agree with all of them, or would you leave out or add something? Then arrange your characteristics according to a ranking into a sequence starting with the most significant characteristic and give reasons for your ranking.

In the school and classroom practice, correction aids and evaluation guidelines are widely distributed, in which good teaching is designed mostly on the basis of experience features and criteria. The following example shows ten characteristics of good teaching that was compiled for the purposes of teacher education and training (Höffer-Mehlmer 2009, p. 3f):

1. **Clear teaching structure**: objectives, contents and processes of teaching must be clear, as well as the roles of teachers and students. The rules by which work and interaction take place, are laid down.

2. **High Amount Of Time On-Task**: The available classroom time is best used for learning. This is achieved by good time management, punctuality and clear rhythms of the day's program. Organisational issues are largely outsourced, so that little or no teaching time is spent on them.

3. **Good Climate for Learning**: Some of the prerequisites for a good climate for learning are mutual respect, the reliable observance of rules and the assumption of responsibility. Justice and care are other requirements for a good climate for learning.

4. **Content Clarity**: This criterion overlaps with the first, the clear structuring. In content clarity, the emphasis is laid on the fact that assignments are given in an understandable manner, the learning process is observed and taken into account and that the presentation of the content is understandable.

5. **Meaningful Communication**: Meaningful communication is promoted through the participation of students in the planning and management of the conversation culture.

6. **Variety of Instructional Methods**: The diversity of methods helps to ensure that students with different prerequisites and learning styles can be reached and that teaching can be adjusted. It is important to note, however that goals, content and methods cannot be defined independently from one another. The „variety of instructional methods" has no value of its own."

7. **Individual Support**: Individual support needs time and a free hand. One must differentiate and also give adjusted explanations and tasks. The teacher must have a clear view of the learning stage of the individual student and pay particular attention to certain students.

8. **Intelligent Exercises**: Students should become aware of the learning strategies they use and those which they can also use in addition. The exercises should be varied and be application-related.

9. **Clear Description of Goals to be achieved**: The students should be clear on what is expected of them. Feedback on the performance should be reasonable and fair and they should be done promptly.

10. **Well-Prepared Learning Environment**: The learning environment, the classroom, but also the organisation of the school should offer the students a solid framework for their learning. The rooms should be spacious and aesthetic.