Didactics and methodology in adult education

Guidelines and manual for e-training

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Objective

The goal of this manual is, on the one hand, to provide guidelines for digitally-supported teaching and learning (e-training), which will serve as guidelines and quality standards for corresponding training offerings at the dbb akademie.

On the other hand, it is intended as an orientation aid and handbook for lecturers and trainers to be able to conduct e-training courses according to the required quality criteria.

Current situation of the further training market

To date the dbb akademie has been under-represented on the e-learning market.

Competitors have been offering webinars or e-learning products for a long time, but these training offers are sometimes of questionable quality and often only represent the lowest learning level of knowledge transfer.

Classical e-learning products on a wide variety of topics are often based on self-learning and are now often of good didactic quality. However, there is often a lack of social learning and interactivity, i.e. the possibility of exchange between the trainer and other participants.

By developing and offering e-training courses, the dbb akademie aims to counteract precisely these two weaknesses of the above-mentioned products: learning should go beyond the mere transfer of knowledge and take place as a social event!

Scientific background

1. **Innovations in the teaching and learning process**

In particular, the different educational processes taking place in *all* forms of events are a good starting point for change.

The multiple-documented results of brain research on the topic of "brain-friendly teaching and learning", are therefore incorporated into the pedagogical work of the dbb akademie.

1.1 Neurodidactics or: How do adults learn?

Adults make conscious decisions about which learning processes are worth pursuing. They act according to the motto: "Learning is for doing".

Teaching is only conditionally a *direct* transfer of knowledge. Learning, according to neurodidactics, is a highly-subjective process with individual structure and different connections to the existing "neural map".

People develop so-called "centres of expertise" in the brain - i.e. areas they like to visit, which they would like to develop and maintain. For further training, they thus represent the starting point which, with sufficient motivation on the part of the learners, enables them to deepen their knowledge. In short, the participants of a further training measure should be addressed at this stage of learning.

Furthermore, the proof of practical relevance is decisive. Practical relevance does not only refer to professional relevance, but concerns all areas of life of the learner.

The following four factors determine the learning situation of adults:
- factual logic of the topic (complexity, logic)
- psyche of the participants (experiences, interpretations, emotional approaches, resistance)
- application of learning situation (practical relevance, consequences)
- group dynamics (interaction, communication, discourse)

Brain research confirms that adults tend to learn more easily,
- the more lifelike, interesting and new a topic is,
- the easier it is to link the new contents to already existing experiences as well as contents relating to consciousness and imagination,
- the more clearly they have a goal in mind,
- the more the new information becomes emotionally anchored,
- the more their self-esteem is strengthened and the participants are taken seriously,
- the more they feel comfortable in the situation/organisation (group, room, atmosphere, service etc.)

1.2   Learning principles from neurodidactics

The findings of brain research lead directly to didactic-methodological considerations:

Detecting something new	If a content is not perceived as new, it is quickly checked off or cannot be anchored (learning material with value of being something new).
Detecting a connection	The brain checks whether the learning content can be connected to existing knowledge and experience (mobilising the participants' knowledge and experience).
Meaning	The brain checks the learning content for its personal relevance (learning material with lifeworld orientation).
Perspectives, differentiations	Social learning has the advantage of perceiving new perspectives (also from fellow participants - if the trainer allows it) and recognising differentiations in the construction of reality (promoting social learning).

Heterogeneity, interaction, activity	Heterogeneous learning groups are more effective than homogeneous learning groups (use heterogeneity, encourage interaction, enable active learning).
Emotionality	Emotions are the connection between learning and remembering: If the emotions are not touched, there is no learning (addressing all senses).

1.3 Consequences from neurodidactics

The initial didactic-methodical consequences are: staying away from the *instructional method and moving* towards the **constructional method.**

This includes among other things:

- *Situated cognition:* learning contents are anchored in concrete situations of use - practical relevance!
- *Exemplary learning:* Practical examples are exemplary, i.e. findings and solutions are transferable to similar cases.
- *Authentic uses*: The possibility to implement is authentic, i.e. relevant for the learner.
- *Constructivist language*: The language of the trainer should be above all pictorial. Our conventional language is more scientific, political or legal and therefore less suitable for teaching. It prefers binary codes (right / wrong) and generalisations. Constructivist language, on the other hand, is cautious, relative and reflective of perspective. It favours openness.
- *Humour*: Learning should take place in a cheerful and humorous atmosphere. Humour is motivating, stimulating and draws attention. Humour opens up unusual and surprising perspectives and achieves effects without lowering the cognitive level.
- *Creativity*: Brain areas are linked in a new way by using creative methods, leaving familiar problem-solving strategies behind (e.g. brainstorming, brainwriting and headstand methods). Creativity requires lateral thinking and a change of viewpoint. A change of perspective combined with interaction in the group facilitates creativity.
- *Experience and knowledge:* Adult participants are competent and have extensive experience and knowledge. The quality of a course depends largely on whether this potential can be brought in, reflected upon and compared.
- *Self-reflection*: A self-reflective method is, for example, a learning dairy. The participants can document learning progress, new and practice-relevant knowledge, new perspectives and questions, the acquisition of competences and qualifications and, if applicable, learning difficulties.
- *Encouragement*: Feedback, encouraging feedback and positive emotions are necessary to minimise learning barriers, fears and anxieties about too high demands.

2. Digitally-supported teaching and learning: e-training

As in a face-to-face training, e-training consists of learning modules with teaching and learning phases. The only difference is the support by digital tools.

The dbb akademie uses the "Adobe Connect" platform for e-training, which is easy to use.

On the one hand, this is where the training takes place - with presentations, lectures, discussions and exercises.

On the other hand, there is an electronic seminar folder with lecture notes, Powerpoint presentations, key texts, videos and links as well as the documentation of the respective training.

Nevertheless, online teaching and learning formats have some specificities compared to face-to-face seminars, which should be considered:

Online:

- There is no simultaneous physical presence of people in the same place.
- Professional communication is conveyed through electronic media.

- ➢ This has consequences for social encounters, writing and language behaviour and reflection processes!

Examples of impact factors (related to participants):

- Reduction of perception channels, space for construction processes
- High concentration (increased effort, being fatigued more quickly)
- High focus (increased effort)
- Increase of proximity by distance (possibly faster and higher self-revelation due to non-visibility)

Requirements for those delivering training (trainers, lecturers, coaches):

Special reading, writing, speaking and listening skills are required, e.g.

For audio-based communication:

- Frequent feedback and reassurance that the meaning is understood
- Giving clear descriptions when using certain tools
- Speaking using positive connotations
- Keeping the momentum going, steering conversations in a sensitive way.

In the case of written-based communication:

- Appropriate writing style (keep participants and context in mind)
- Short sentences and, if possible, no subordinate clauses

- Clear, direct questions, avoidance of ambiguities
- Small units; structure with paragraphs
- Short answers
- Focus (always address only one aspect at a time)

The advantages over face-to-face seminars are, for example:

- Independent of location (if necessary also independent of time)
- Shorter / more frequent learning units
- More economical (saving time, travel costs and getting suitable seminar premises)
- Flexibility and supra-regionality
- Synchronous and asynchronous possible
- Reaching new target groups (e.g. remote employees, people with an affinity for technology, people with disabilities, etc.)
- Direct documentation

2.1 Didactics for e-training

Teaching should not only aim at the mere transfer of knowledge. To achieve the greatest possible benefit, "e-learners" should also be able to experience practical relevance.

However, the teaching practice is complex; it depends on the content, the spatial and organisational conditions, timing, aids and, of course, always on the teaching staff.

e-training also consistently takes into account all aspects of learning by constantly setting new requirements over the entire duration of the training course.

The participants are continuously encouraged to apply what they have experienced and developed further. Concrete application is the goal and "finishing touch" of every learning process!

According to the findings of neurodidactics, the teaching and learning phases in e-training courses always consist of the following elements:

Opening of the course:

- Introduction of the trainer
- Introduction of the participants
- Orientation about contents and learning goals
- Query of participants' expectations

The *introduction of* the trainer is already made before the start of the course together with the programme in the electronic seminar folder.

The programme description, in particular the specified learning objectives (or competence objectives), and a list of the contents are suitable for the *orientation* on the learning contents.

The *query of the participants' expectations* should also be made before the course in Adobe Connect. It can be easily combined with a technical briefing on Adobe Connect *before* the actual event. This saves time and effort when online, helps prepare the instructor, reduces the technical barrier and builds confidence.

A query of the participants' expectations can also be visualised online. In addition, a "digital parking space" can be set up for topics that are additionally raised during the e-training course. This "digital parking space" should be visible to everyone and at the end of the training course it should be checked whether all aspects have been addressed (within a certain framework).

It is important to note that when using e-platforms, it can sometimes be stressful for the participants to deal with the technology: This is a completely different kind of stress than, for example, a late arrival, because in dealing with technology, there is always the fear of being embarrassed in front of the other participants. In this case, it is advisable that the trainers are in the room approx. 30-60 minutes in advance in order to offer help and break down barriers.

The introduction of the participants to each other is the first online action, unless they already know each other.

The opening phase of the e-training course is followed by the main part on the respective content aspects. There are two possible approaches:

	deductive	inductive
Beginning	Motivation for the learning section	Motivation for the learning section
Main part	Clarification of previous knowledge	Case study description
	Presentation of contents / theoretical background / examples	Case study solution by participants
	Clarification of the contents in conversation	Presentation of the solutions with feedback
	Exercises on case studies with presentation and feedback	Content aspects and additions by e-trainers and participants
Conclusion	Summary by e-trainer	Summary by e-trainer

The *deductive* approach is familiar to most participants from school, training programmes or the university.

The *inductive* approach corresponds more to the findings of neurodidactics and learning processes in the professional context, even if this is perceived rather unconsciously.

Of course, there are variations between the two forms.

In e-training courses both approaches are supported. When using new media, however, the *inductive* approach gains in importance.

The participants of the e-training courses should be encouraged to learn by the process of discovery.

For example, the description of particular case studies can be used to

- develop hypotheses,
- verify these hypotheses in practice,
- implement different aids and
- create mental images and mental models.

The (added) value lies in the transferability, i.e. the *practice transfer*. The timely transfer to the reality of the learners' practical lives generates a sense of achievement. Success motivates and releases further energy and enthusiasm.

Another important aspect of training is the *exchange between colleagues*, which takes place in face-to-face seminars, especially during the breaks. If this exchange is professionally initiated or supported in terms of content and methodology, these times are always an additional benefit for the participants.

This exchange can also be achieved online: phases of exchange of experience and learning from each other both during and after the training. Therefore, the room should remain open for exchange even after the event, if possible with appropriate moderation.

2.2   Methodology for e-training courses

Digital learning can be exhausting. While a face-to-face seminar always brings some type of change (travel, hotel, surroundings, seminar room, delicious food, new people, joint activities, etc.), participants remain seated in front of their work or home computer during e-training courses.

Many new, stimulating impressions are missing; sending or receiving body language signals is only possible to a very limited extent.

For this reason, the use of activating methods plays a special role in creating a balance.

The methods used in face-to-face seminars can - with some modifications - be easily transferred to e-training courses.

For *presentations,* Adobe Connect provides the option of presenting slides on participants' computers. Explanations of the presenter are provided via audio (see p.5). As in the face-to-face seminars (laser pointer), highlighting can also be integrated during the presentation.

In the presentation (practical and relevant) examples should illustrate the learning material.

Examples

- foster motivation through their practical relevance,
- serve as a guide,
- have a repeating and summarising effect,
- contribute to a participant's (self-)check of learning success and
- facilitate one's own learning transfer.

Question and answer method and discussions

As in face-to-face seminars, the question and answer (Q & A) method and discussions also serve to deepen the learning material and understanding in e-training courses. Questions and answers and their documentation, e.g. on the electronic whiteboard, provide clarification, clarity and structure.

Adobe Connect provides the *video feature* and *written chat for* this purpose. Compared to the classic face-to-face seminar, this even has the advantage that quiet participants tend to express themselves in the chat, which lowers the inhibition threshold.

The *written chat* enables all participants to actively participate, e.g. with questions and comments, even during the presentation. These can then be answered by the trainers at a suitable point in the training course.

In addition, there is the possibility of using *pods to* intersperse polls and quizzes in order to increase interest and be methodically flexible.

Exercises and case study work

Neurodidactics emphasises the importance of group work phases also in a digital context. For the presenter, setting up and designing an e-training course in Adobe Connect may be difficult, but it is manageable.

Exercises and case studies prepare optimally for the transfer into practice. These are essential for the demands of a high-quality e-training course.

As with classroom training, Adobe Connect allows you to initiate case studies and exercises, organise participants into groups and conduct participant presentations with feedback rounds.

The guidelines for good exercises and work on case studies also apply to e-training courses, and are even more stringent, as the organisation of learning is virtual:

This includes, for example:

- a clear and concise description of the case study
- an understandable and comprehensible task
- a precise timeframe
- an indication of the type and form of presentation of results by the participants

Social forms

Learning is social - according to the findings of neurodidactics. This means that even in e-formats, if possible, various social forms and social processes among the participants should be incorporated.

Social forms can be represented in an e-training course as well as in the face-to-face seminar.

Work in plenary:
All participants must be logged into Adobe Connect to be able to work in the plenary session.

Group work:
Group work is possible if groups of participants "retreat" into a virtual group room for work.

In particular, group work is important in e-training and a significant distinguising factor between e-training courses and the simple webinar. In e-training courses, the exchange between the participants themselves and thus the learning process are strengthened.

Individual work:
Individual work is possible if learners want to work on the learning material themselves or want to develop it further. In particular, this social form is rather unusual in face-to-face seminars, but can be used quite well in e-training courses.

2.2 e-Training media

The media portfolio essentially corresponds to that of a face-to-face seminar.

Both *Powerpoint* and the *whiteboard* (instead of flipcharts or pin boards) can be used.

Videos can support learning: They are even more important in e-training courses than in face-to-face seminars. For this purpose, videos can be made available on the *Moodle* seminar platform or a link can be provided to suitable *YouTube segments.*

The right choice of videos is very relevant for the success of the learning process. In this respect, classroom seminars are no different from e-training courses.

The criteria that should generally be used to create or select video case studies are

- Are the examples representative of the generalisation/key message?
- Do they reflect reality?
- Can they become effective as a model for practical application?
- Do they provide guidance on the use of work aids and promote further independent work?

According to neurodidactics, videos with mistakes or with (funny) confused situations are especially suitable. The same applies here as in the face-to-face seminar: Do not use a video without *observing and evaluating it beforehand*!

In addition, key texts, learning objective checks, polls, documentation of the e-course (PPTs, whiteboard etc.) can be stored on the seminar platform.

PPTs should be designed in a way that is suitable for online use. In particular, the scope of the PPT should be reduced and compressed: Supplementary texts should be supplied separately.

Moreover, the opening of a new document, searching and finding information together as a group offer an important change of activity.

In addition, there is the possibility to create a recording for learners who missed a section of the course. Each course can be recorded completely and can be made available to the learner even afterwards.

Each e-training course naturally includes a written document. This can include lecture notes, ppts or study booklets. The material from the e-training courses is available in the Moodle platform of the dbb akademie.

Each document can contain, in addition to other information, a number of exercises or tasks that can be used, for example, in courses with numerous modules.

Two forms are conceivable:
- reflective questions and tasks to check on one's own whether the content has been correctly understood or
- application exercises and observation tasks to determine whether what has been learned can be applied.

Important: All tasks are discussed and debated!

2.3 e-Trainer behaviour

It is far more difficult to keep the participants virtually "on track" than in a face-to-face seminar. Thus, the delivery of contents should take place in smaller units.

The trainers can keep less of an eye on the participants and, due to the lack of direct contact, have little opportunity to recognise when participants are "drifting away" and need to bring the participants back on board.

Therefore, it is very important that the trainers make sure that the participants have the same level of understanding.

For the participants, distractions at home or at work can be higher, on the one hand, and, on the other hand, the demands on concentration and focus are enormous.

Online training is also more exhausting for the trainers as they are even more under observation and scrutiny. In particular, the facial expressions are in focus because other body language signals are missing.

It is important, however, that the trainer is seen frequently, as just looking at the presentations with the auditory explanations can have a soporific effect.

A presentable appearance of the trainer in front of the camera as well as online-appropriate, sensitive and empathic teaching form the basis for the success of e-training courses!