



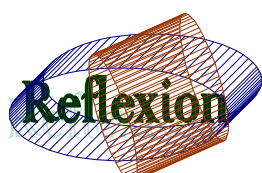
VISUAL LEARNING

QUALIFICATION CONCEPT

GUIDE FOR TRAINERS

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I. Starting point and basic considerations for the qualification concept

The starting point for the concept of the workshop “Visual Learning“ for tutors is the “Qualification Workshop for Trainers“ and the appropriate reader (internal paper), which was presented on 01.02.2007 in Bonn by Prof. Röhl. In addition the partners reached the following decision of the EU-Project “Visual Learning“ the partner meeting of the on 03.02.2007, which will be considered in the concept:

1. The respective concept will include three main subjects: relevance and significance of visual thinking, the power of images and methods of visual learning.
2. The partners have to work out additional subjects for the workshop.
3. Conditions and requirements will be respectively taken into account for the participating countries with regard to the organizations concerned and their target groups
4. The focus will be on the respective workshop’s didactic and methodological requirements as well as an active integration of the participants.

Further guiding thoughts are additionally based on the concept of the workshop for tutors in Germany and Ireland.

- The contents of the “Qualification Workshop for Trainers“ are not sufficiently geared towards the target group of tutors in the field of Basic Education and Literacy involved in the project. The contents which are to be included in the concept of the workshop for tutors should be related to education and/or everyday course life in the respective institutions.
- The theoretical part of the workshop will be extended by learning psychological aspects.
- The tutors will get practical advice regarding what to pay attention to.
- A choice of abundance of visual methods should be made in order to meet the requirements of the tutors and the institutions. In the subsequent workshop the tutors will have the opportunity to apply the methods that were presented.
- Generally, the experiences and recommendations of tutors will be documented in the workshop in order to use them for the final concept of the project.

These points, which will be outlined in more detail below, together with the presentation, form the starting point.

II. Development of the programme

After presentation of the daily schedule tutors shall be introduced to the subject “Visual Learning“. A visual method of approach is hereby intended for use. Afterwards, important results of the group discussions with learners within the project will be presented. This section is especially suited to build a bridge between the subject “Visual Learning“ and the experiences of the tutors. The presentation will serve to encourage tutors to talk about their experiences with learners regarding “Visual Learning“ in everyday course life and beyond.

Afterwards, relevant theory fragments will be presented on the subject of “Visual Learning“. This part will make clear that it deals with an interdisciplinary subject and

the content of the workshop is based on theory. In addition, psychological learning aspects, which differ from the original concept, will be presented in order to illustrate the relevance of visual methods.

Before the tutors practically apply these methods, general organization elements and principles should be presented. These can then be used when it comes to practical application methods. This would entail the creation of mind maps, clustering, cognitive maps etc. In this way, the organizational elements and principles pertaining to visualisation through application of a practical reference can be better internalized.

Application of the methods in the so-called circle of methods should not demand a procedure which is too inflexible for the tutor and they should not be restricted by it. The methods should be chosen according to interest. Evaluation of the methods regarding relevance and usefulness for everyday course life will not take place until the last section of the workshop. The tutors are therefore asked to write their expressions on a metaplan map after each method application.

Before the final group discussion takes place, two types of input will be brought in. First, it will be demonstrated how pictures without a copyright can be researched on the internet, and which important elements are to be taken into consideration. On the one hand this part will explain to the tutors the principles of investigating pictures, symbols and icons without a copyright.

On the other hand, it will encourage the use of pictures in class. Afterwards a learning type test will be presented as an example to the tutors. Here it is not so much about carrying out tests, but about sensitization and reflection of individual preferences of learning by the tutors.

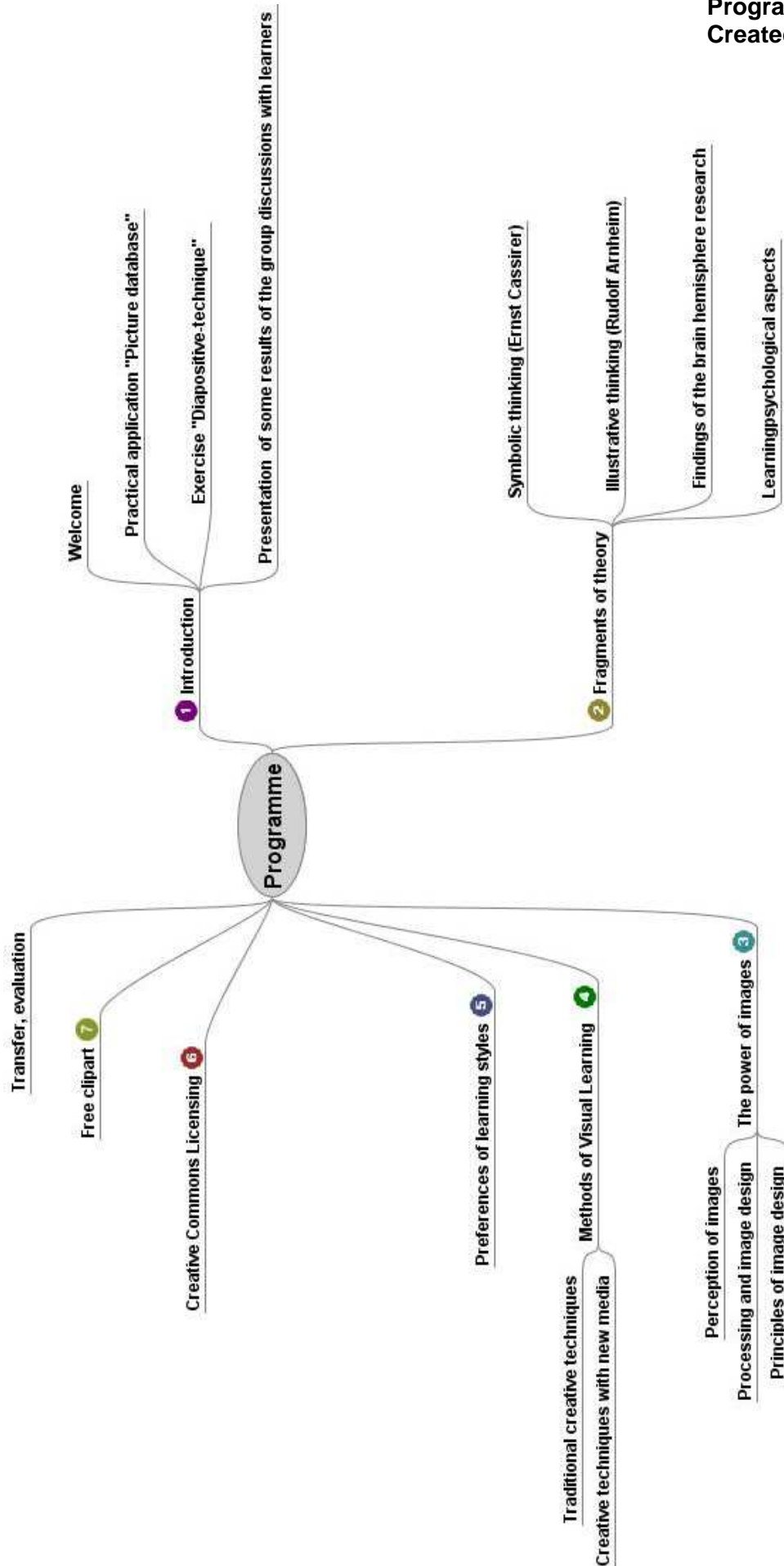
In the final discussion the individual methods, which were presented and applied, should be evaluated by the tutors. Reference should be made about their usefulness in everyday life. The principle purpose here is to document the advantages and disadvantages of the respective method and the recommendations of the tutors regarding the application in class. Other possible demands that are necessary for the use of "Visual Learning" in the institutions will be investigated.

Based on these considerations the following workshop programme has been prepared. (Detailed information and didactic considerations regarding the individual content are to be found in Part III of this concept.)

Programme

9:00 – 9:15 am	Welcome, introduction to the day's events
9:15 – 10:15 am	Visual start through example of a “picture database file” <i>practical application, exercise</i>
10:15 – 10:45 am	Visual competence of learners Presentation and discussion of some results of the group discussions ¹ with learners concerning visual learning <i>input, exchange of experiences, discussion in the entire group</i>
10:45 – 11:00 am	Break
11:00 – 11:45 am	Regarding the relevance and significance of visual thinking: Fragments of theory <ul style="list-style-type: none">- Symbolic thinking (Ernst Cassirer)- Illustrative thinking (Rudolf Arnheim)- Findings from brain hemisphere research- Psychological learning aspects <i>Theoretical input by means of a presentation</i>
11:45 – 12:30 pm	The power of images, Perception of pictures Image processing and image design <ul style="list-style-type: none">- Principles of image design- Practical hints regarding visualization- <i>Presentation with examples and exercises</i>
12:30 – 01:30 pm	Lunch break
01:30 – 03:00 pm	Methods of Visual Learning <i>Among other things:</i> mnemo-techniques, clustering, mindmap, working on ideas, cognitive maps, mindmanager, freemind, storytelling, <i>Circle of methods: practical application, discussion</i>
03:00 – 03:15 pm	Break
03:15 – 03:30 pm	Preferences of learning styles <i>Presentation, exchange of experiences, discussion with the entire group</i>
03:30 – 4:00 pm	Searching for free images, Creative commons and free clipart Practical hints for researching pictures, photos and images
04:00 – 5:00 pm	Transfer, evaluation and wrap-up <i>Discussion, individual work & whole group discussion</i>
05:00 pm	Close

¹ Within the frame work of the EU-Project “Visual Learning“ group discussions with learners regarding the subject “visual learning“ were conducted. For more on this topic, see: Explorative Research: Relevance of Visual Learning for specific target groups.



III. Explanations regarding the contents of the workshop and didactic considerations

After welcoming the participants, a brief presentation of the EU-Project “Visual Learning“ will be carried out to introduce the workshop theme and its connection to the project. The activities and aims of the project will be presented here. The project’s newsletter shall also be referred to with the purpose of deepening and extending the subject of visual learning. This can also help to create a rapport within the group and possible tutor network after the workshop.

Following this, the workshop programme will be presented with the help of a mindmap which is enclosed. The visual presentation of workshop contents should spark the interest of the participants.

09:15 – 10:15 am Visual start

Based on the example of a “picture database”
practical application

The introduction group serves as a “warm up“ in order to introduce the subject of “Visual learning” to tutors. The introduction group will proceed as follows: the tutors choose two pictures out of a picture database: one picture with which they have positive and one picture with which they have, negative associations. Afterwards the participants can explain their picture selection. The participants will also be asked to give details about the place where they work, their target group in class, their experiences with visual learning and their expectations of the workshop. They will be encouraged to discuss and later exchange ideas with the help of these details, the spectrum of specialist fields offered, practical fields and experiences of the participants right at the beginning of the workshop.

In addition, the “visual start“ will demonstrate to the tutors that pictures are interpreted in a subjective way determined by the biographical and social background of the person.

Slide technique

Exercise

In the exercise “slide-technique“ the tutors are scratching a picture with a needle on a diapositive-film. Afterwards the pictures will be shown on the wall with the help of a projector. This exercise will not be familiar to the tutors and will provide a good activity. This exercise will show that even with little means, images or designs can be produced. The advantage of this exercise is that even tutors who cannot draw or paint very well can take part in the exercise. The pictures produced in the workshop are published in the gallery of the project-website and on the CD-ROM as well.

10:15 – 10:45 am Visual competences of learners

Presentation and discussion of some results of the group discussion² on visual learning with tutors

Input, exchange of experiences, discussion as an entire group

In this section of the programme the method, goals and results will be briefly presented to the participants.

This input has the following goals:

- The results of the group discussion will be examined and/or discussed by the tutors.
- The tutors will be encouraged through the presentation to talk about their own experiences regarding visual learning and the visual competence of their learners.

The subject „Visual Learning“ is likely to be relatively foreign to some tutors. Tutors may well be using visual methods in class, without realising it. After the presentation of the results, the subject will gain a certain amount of clarity and will help the group to exchange experiences.

The presentation of the group will focus on the following points³:

- Explanation of the question categories that were used in the group discussion. According to these, the explanation of the results will be carried out (preferences in media, experiences with pictures and symbols in everyday life, success and difficulties using pictures in everyday life, learning preferences, subject preferences of the learners with reference to the courses and the learning biographies of the participants of the course).
- The use of television predominates significantly in the target group (participants of basic education and literacy courses). The television serves to bridge the gap, because it is used in a supporting way for understanding language and writing for the learners.
- All experiences with pictures, symbols and pictograms derive from the learners' everyday life. Here, differences between the city and rural areas are noticeable. Pictures, brands and logos from advertisements are not important for the target group.
- In all discussions the orientation function and/or achievement of pictures for the target group becomes extremely visible. Apart from pictures colours are mentioned as well.
- Migrants are sometimes able to read script and/or terms, however, they are sometimes not able to understand them. They are often able to construe the meaning with visual impressions. German speaking functional illiterates very often only find their way around with the help of visual impressions.
- The computer is not used in private life by the target group, even if they have such at their disposal in some households.

² In the framework of the EU-Project "Visual Learning" group discussions dealing with the subject visual learning have been carried out.

³ For more on this topic, see: Explorative Research: Relevance of Visual Learning for specific target groups.

- In the target group specific problems in everyday life can be identified (e.g. if Muslim migrants are shopping).
- In the target groups, the visual learning style predominates, which is partly mixed with further learning preferences. Very often the learners are not aware of their own learning style.
- The importance of informal learning has a great significance in all learning biographies and the learners are aware of it. Media are specifically used to obtain information and take on a special educational function. Here visual competence is very well developed by most of the learners.
- Concerning visual learning, the learners have mostly everyday life knowledge at their disposal (i.e. the merely practical visual orientation in everyday life).

Encouraged by explanations of the results, the experiences of the participants will be recorded with the help of a mindmanager, put together in groups and visualized.

Furthermore this part of the workshop demonstrates the relevance of visual learning in everyday life and in the classroom and establishes a concrete reference point regarding the learners. In the further course of the workshop, if need be, references to the individual results can always be made.

11:00 – 11:45 am **Concerning the relevance and significance of visual thinking; fragments of theory**
Theoretical input with presentation

The theory section shall provide a brief introduction and give a first overview. The reader on visual learning contains further details as well as references for an intensive occupation with the subject.

The following theory fragments will be taken into account.

- Symbolic thinking (Ernst Cassirer)
- Illustrative thinking (Rudolf Arnheim)
- The findings of the brain hemisphere research
- Psychological learning aspects:
Possibilities of the representation of knowledge (statement-like, analogue, action-oriented and finally the various representations of knowledge)

The theoretical part will be introduced by **Ernst Cassirer**. Here, only a few fragments of his model will be explained. The goal is primarily to mention Cassirer's contribution regarding the significance of mythological thinking for the intellectual orientation of human beings.

For thousands of years, rites, pictures and symbols have been regarded as a device to explain the world. Symbols served as identifying marks and authorization marks. According to Cassirer's opinion the human being should be defined as "animal symbolicum" because the whole progress of culture is based on the precondition of symbolic thinking and behaviour. Only human beings have a symbolic language at their disposal, a symbolic imagination and a symbolic intelligence. Classical

imaginings of the human being as "animal rationale" are questioned by Cassirer, because the rational system of thinking was developed later on (cf. Reader Visual Learning 2008, p. 8-11).

Further differentiations of Cassirer, symbolic forms, will not be explained in the workshop, but rather Cassirer's examples will help to explain the significance of symbols and signs in the history of mankind.

Afterwards, **Rudolf Arnheim** will be presented as the representative of **Gestalt psychology**. The aim of this contribution is to briefly explain the findings of perception of form and the resulting gestalt laws. They build the theoretical base for the figure elements and principles that will be presented in the next part of the workshop.

"Forms, figures and gestalts are, according to this research institution, the result of structuring processes and the establishment of connections in the perception field". The formation of gestalts depends therefore on the distinction between figure and ground (figure ground distinction). This performance of perception is viewed as the precondition for a safe and fast orientation and/or the recognition of objects. According to the gestalt psychology, the perception takes as a reference point so-called types of forms and not the combination of single impressions and/or individual special forms. Perception of forms means, according to Arnheim, the understanding of general characteristics of structure (Ibid, p. 10-12).

The framework of the workshop will include the laws of "figure ground distinction", the formation of groups (equality), "the proximity" and the "common fate" (concurrent behaviour) examples will be given, with the help of pictures.

Currently relevant models will be presented as "**Psychological Learning Aspects**" in order to show the significance of visual learning, of the various representations of knowledge, of associated learning and finally of visual learning. This is also the precondition for the practical part in the afternoon. Without this new input the methods of visual learning, the creative methods, may not be understood.

The starting point will be the findings from brain research. Here the goal is to illustrate how the two brain hemispheres function, which reveals the functional cooperation in the brain (left hemispheric - analytical and right hemispheric - intuitive). Hence, working out visual, vivid and musical impressions takes place in the right side of the brain (the non-verbal system). It is the centre of emotions and impulsiveness. With the help of the non-verbal system, different dimensions of an impulse can be taken in at the same time (e.g. colour, size and form). Thus, the processing of a picture more likely occurs in a sequential way.

The left side of the brain is responsible for logical thinking and builds the centre of human rationality with the ability to think abstractly. It is responsible for logical thinking as well as for sequential work like working out figures and processing linguistic information (cf. Edelman 2000, p. 8f).

Afterwards, the cognition psychologist Paivio's "**Concept of Double Coding**" will be explained to the participants in the workshop. He delivered the theoretical reason for the impact of pictures. The hemisphere research also supports this impact. According to Paivio, the system (brain-half) that is activated depends on the kind of stimulation. Thus the term "dog" can cause a verbal or a vivid imagination. A coding

in both of the systems enhances the probability that the stimulation can be more easily registered and remembered later on (Ibid. p.152f.).

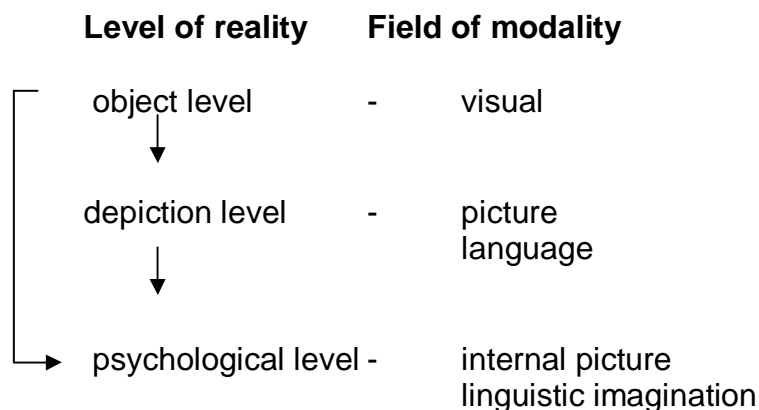
Nowadays an inclusive view of the functioning of the human brain prevails. Both hemispheres are in complementary ratio to each other and they support one another with their specific faculties. Language and pictures are worked out in both brain-halves. For example, decoding of words and understanding syntactic structures belong to tasks of the left side of the brain; among other things the right side of the brain is responsible for the emotional painting of the terms. However, it is supposed that the processing of pictures mainly takes place in the right brain-half (cf. Kroeber-Riel, 1996, p.23). Despite this point of view, there is ample evidence that some human beings tend to perceive and to act according to the left hemisphere or to the right hemisphere. It is considered that the regular syllabuses in schools are especially focused on the left hemisphere. A stronger inclusion of the right hemisphere (responsible for the intuitive and illustrative thinking) could lead to an improvement learning potential.

The ideas of the individual hemispheres and the concept of double coding according to Paivio is a good base in the workshop dealing with further explanations regarding the representation of brain knowledge . These are:

- Verbal symbolic and linguistic representation
- Analogue representation
- Action-oriented representation (relatively unimportant in research so far)

Concerning the explanation, the main emphasis in the workshop will stress the analogue representation of knowledge. It stands out due to its vividness. There is a certain resemblance between the outer appearance and the inner representation. Internally a thing can be registered by a relatively illustrative picture or by a relatively abstract meaning. Imagined pictures are always interpreted information. Three-dimensional imagination pictures (e.g. book on a table) or linear orders (e.g. pearls on a string) can be distinguished.

For a better understanding of the relation between reality, images and language, “reality levels“ shall be depicted in the workshop for the tutors:



On the object level we refer to concrete visual appearances. Concrete facts can be transported via picture and language on the depiction level. On the psychological

level, figurative or linguistic imaginations will be evoked in the observer. Even fictional facts can be made perceptible by image and language e.g. "Batman flies over the city". Thus regarding fictional facts internal pictures can arise in memory, which have the same quality of perception like internal pictures of real facts (Ibid, p.37).

In many cases the memory seems to have a greater capacity for visual content than for verbal content. This has been confirmed by surveys in numerous cases. In the workshop this will be made clear by a classical experiment in which Paivio explains the memory performance of pictures and words (Ibid, p. 27).

Learners are able to acquire knowledge in an acoustic, optical or linguistic (in terms to content) way or in the form of illustrative imagination. Nevertheless, it can be stressed that certain contents can be learned and remembered more easily if they are processed linguistically (in terms to content) as well as in an illustrative way (multiple processing = multiple representation = result of the dual coding). It is obvious that illustrations aid in learning of abstract ideas.

In larger fields of knowledge complex networks will regularly appear. The opinion that knowledge is linked and often recorded in verbal and analogue form is the most important point concerning the understanding of greater specialized fields. The attempt to remember complex subject material sequentially as an ongoing list is in all likelihood doomed to failure. In the mediation of linked knowledge therefore, the whole system as well as the single elements are to be structured in the appropriate way. Linked knowledge always shows a surface structure and different layers in a deep dimension. For this kind of information-processing the term of "hypertext" has become established. For researching conventional texts, free navigation at the computer is much easier. Nevertheless, effort can be to encourage a linked thinking with the help of cross-references. Here the learners can build bridges between the individual terms and contents.

Internally people design mental models especially when it comes to relatively complex facts. These represent extensive structures and processes of a mental reality area. They integrate linguistic, figurative and acting related knowledge whereas an entire analogue form of the representation is the centre of attention. Mental models allow the internal simulation of external processes and determine the thoughts and actions of the respective person. They enable the solution of tasks and problems (cf. Edelman 2000, p.156f).

Visual creative methods e.g. "mind mapping" or "clustering" are well suited to making mental models visible, to structure knowledge, to prepare lessons and presentations and to illustratively present syllabus. Through continuous associative branching out an extraordinary storage capacity can be achieved.

In connection to this, the methods of visual learning become clearer, because they support associative thinking. The learner is able to build bridges between terms and their meanings. Thus, the achieved storage capacity is sometimes huge.

At the end of this theory block open questions from the tutors will be taken

11:45 – 12:30 pm

The power of the image

Image perception, image processing and image design

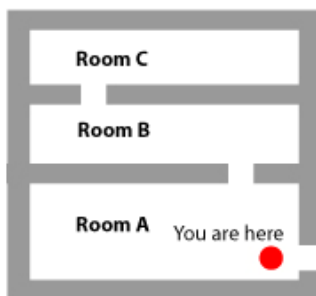
- Design principles
 - Practical devices concerning the visualization of images
- Presentation with exercises*

As an introduction, influence sizes like “the power of the centre”, “image margin”, “harmony and tension”, “space and perspective” will be discussed. However, the priorities of this block are the design elements and organization principles.

Apart from the design of letters and texts there are some basic design elements like dot, line, surface and room. Included will be features like colour, form, position, size, number etc. In the workshop a selection of basic elements and principles of visual design will be presented in a way that they can be related to class and/or to the visualization and the design of learning materials.

The following design elements and principles should be presented in the workshop.

The dot as the simplest design-element •



Example of application:

Dots can be used in the design in many different ways. Here is an example referring to the visualization of a certain position.

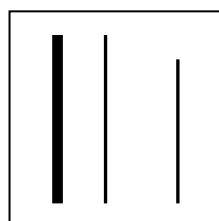
Photo: DIE, Bonn

Lines



Over-rating of horizontal lines: The visual acuity is better developed in the horizontal direction. Therefore geometric squares appear subjectively to be too low. The optical centre is almost above the geometric centre which can be seen on this picture.

Photo: DIE, Bonn



Vertical lines interrupt the eye movement and/or can stop it.

Photo: DIE, Bonn

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Application example: Vertical lines can limit ideas and thoughts and provide clarity.

Photo: DIE, Bonn



Diagonal lines give a sensation of movement and dynamism.

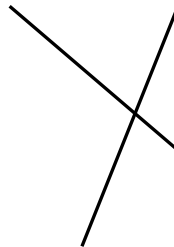


Photo: "Bandai. Jumping experiment" by [pasotraspaso](#) published under [CC-BY](#)

Surface / Conciseness (good shape)

Well conceived shapes take the perception of simplicity, symmetry, regularity and continuity into consideration. Well known logos which are easy to remember generally do this. Design of visual teaching material, should be based on having simple structures and a symmetrical lay out. This style enables concentration on the essential contents.

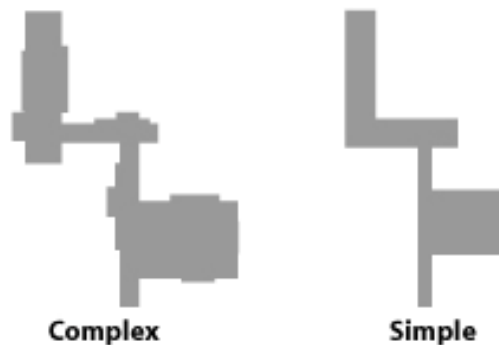


Photo: DIE, Bonn

Simplicity



Photo: DIE, Bonn

The law of simplicity follows the human mechanism of perception to simplify visual images in a way that the observer is unconsciously able to understand. This mechanism works very well if the graphic message is kept simple (see example above: simple and playful depiction). Complex and overly ornate learning material lay-outs not only hinders concentration of learners but also has a real counterproductive

effect. In the process of simplification, ambiguous elements can lead to completely unintentional conclusions.



Photo: DIE, Bonn

Continuity

A

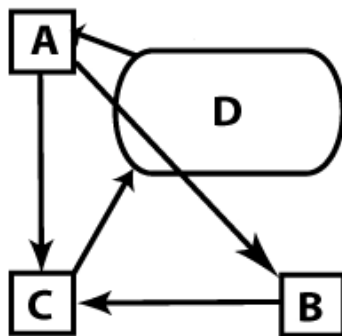


Photo: DIE, Bonn

B

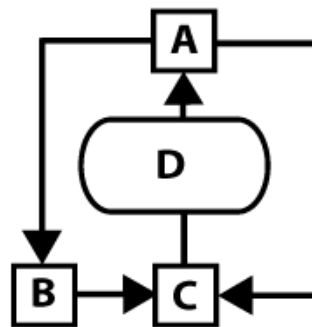


Photo: DIE, Bonn

Examples of a good and bad lay-out:

In diagram B, the law of continuity was observed. Thus elements which were connected and those which were not quickly become more visible

Similarity

<p><u>Methods of visual learning</u></p> <p><u>Traditional creative techniques</u></p> <p><u>Creative techniques with new media</u></p> <p>Clustering</p> <p>Mind-Mapping</p> <p>Coaching of ideas</p> <p>Storytelling</p> <p>MindManager</p> <p>FreeMind</p> <p>Open Mind</p> <p>Mediator</p>	<p>Methods of visual learning</p> <p>Traditional creative techniques</p> <p>Clustering</p> <p>Mind-Mapping</p> <p>Coaching of Ideas</p> <p>Storytelling</p> <p>Creative techniques with new media</p> <p>MindManager</p> <p>FreeMind</p> <p>Open Mind</p> <p>Mediator</p>
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The lay-out of this list at the top right of the page enables the learners to see coherent things in a coherent way. According to the law of proximity things related to

the subject matter were grouped closely together. According to the law of simplicity the laid out structure supports the immediate orientation within the group.

Objects of one class can appear within a graphic e.g. in the same form. Different fields of content can be outlined through different colour codes. For positive and negative values in one table different formatting can be used.

Focus

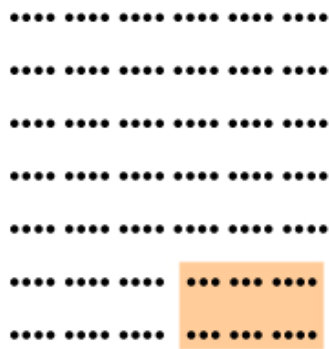


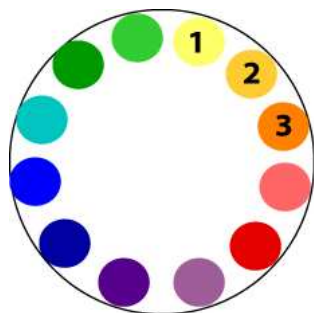
Photo: DIE, Bonn

The contrary - the wilful violation of the law of similarity – can be used to specifically draw the attention of the learners. The law of focusing states that elements which form as a focus also remain in the centre of perception. The graphic demonstrates this: the circle (example above) significantly stands out from the other figures because it is very different. It takes on the function of an “eye catcher“ and serves to draw the observer’s attention onto itself. It is advisable to set a clearly visual course in presentations; this will in advance structure a recognizable learning path. Keywords can also be visually stressed, so too can sound and animation be used for focusing on interactive media. However, it is

advisable to use them sparingly. Too much focus will irritate the learner and also cause loss of their interest due to disorder.

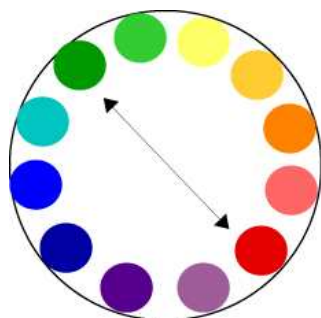
Colour

Regarding the lay-out of teaching material a certain selection of colours should be considered:



Analogue scheme of colours: Indefinite neighbouring three colours on a colour circle are called analogue colours. Generally it is dominated by one of the three corresponding colours.

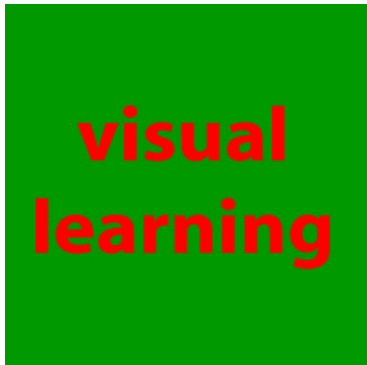
Photo: DIE, Bonn



Complementary colour (harmony of contrast): Complementary colours are facing one another in the colour circle e.g. red and green. These colours have a maximum contrast and a maximum stability.

Photo: DIE, Bonn

In visual connections, harmony means a balance in the visual reception. Extreme homogeneity can cause too little attention whereas extreme complexity can cause too much attention.



In the graphic example on the left, complementary colours have been used. Extremely strong contrast while observing will be experienced as somewhat difficult and uncomfortable. In nature harmonious colour schemes do occur and these can not be developed from man-made chemical formula to induce colour harmony.

Photo: DIE, Bonn

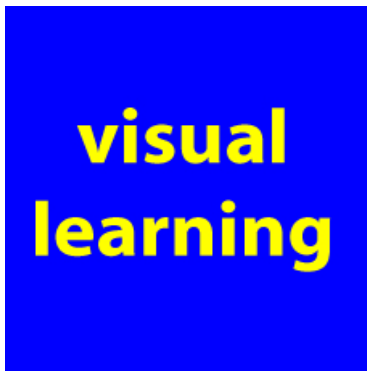


Photo: DIE, Bonn

Text and image

Images by themselves are often ambiguous. Verbal additions serve to limit the ambiguity of images for the recipient and to state the interpretation more precisely

Text and image must bear relation to each other and have to complement one another in order to reach an integrative general understanding. Here three kind of text-image relation with regard to content have to be distinguished:

- Congruent relations: the text describes what the picture shows.
- Complementary relations: the text has blanks which complete the picture (and vice versa).
- Elaborative relations: The text of the content extends beyond the image (and vice versa).

Acquirement of knowledge is supported by the congruent correlation by duplicating information. A complementary lay-out in particular is didactically recommendable. This requires the evaluation of both kinds of depiction for overall understanding. The elaborative relation only makes sense if adequate background knowledge can be expected.

The precondition for understanding an integrative text-image is the spatial vicinity of text and image so that the eyes can jump about. The evaluation of an image can be influenced by verbal or visual cues. Image titles, image writings and illustrations can

offer verbal advice – arrows and colour emphasis can be used as visual cues. Verbal terms in the text and in the image should always correspond.

These gestalt- and design principles can be put into use by the tutors in the practical part, the circle of methods of the teachers. Thus the theoretical input can be more easily internalized by the learners.

Rearrangement of the room in the lunch break

13:30 – 15:00 pm Methods of visual learning

Among others, mnemotechniques , clustering, mindmap, idea coaching, cognitive land-maps, mindmanager, freemind, storytelling ...

Circle of methods: Practical applications (by example) / discussion

In the practical part of the workshop, selected methods of visual learning will be presented and then applied in practice by the tutors. The following methods will be first explained:

- Brainstorming
- Brainwriting
- Morphological boxes
- Cognitive maps
- Mnemotechniques
- Clustering
- Mind-Map
- Idea coaching
- Storytelling
- Mindmanager & open mind (For use with PC)

Through selection, a good cross-section of methods will be presented

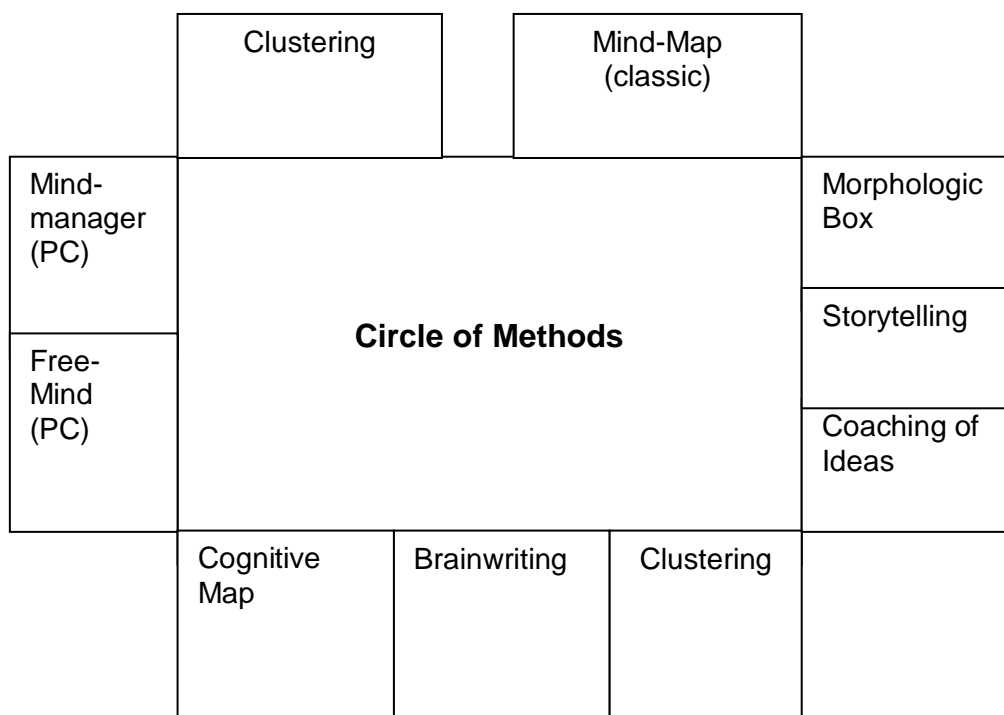
Following that, selected methods can be put to use by the teachers in the “Circle of Methods”. The requirement thus would be to set up, different “stations” in the room. At the one end of the table, the various methods are sign-posted, so that it is possible to get a rough orientation of the room. At every station one method is given a short description as to how it is carried out with which necessary materials (paper, pens, paint).

The individual stations do not have to be completed in any specific order. The participants can choose freely here. It should be noted here, however, that not all methods can be applied in their full depth.

As a support for the tutors, the following example topics are suggested for each method. The tutors can of course work on their own topics.

- **Clustering:** *Visual learning in class
Visual methods in class,
Inclusive learning, successful learning in class*
- **Brainwriting:** This method represents a group product. All participants should try to contribute as best as they can.
Visual learning in class
- **Storytelling:** Here a “story” of the use of different methods in class could be told
- **Mindmap:** Topics according to clustering, however, the participants should not choose the same topic
- **Cognitive map:** *Which problems could arise regarding the use of visual methods in class (on the side of the tutors, the learners., the organization? Which solutions could be found?*
- **Coaching of ideas:** *Methods of visual learning should be introduced in class. (preconditions, upcoming tasks, what will be demanded? Which implicit philosophy of learning shall be applied? What to do next? Choice of Methods.)*

Here a model of the “Circle of Methods“:



The evaluation of methods regarding the relevance and usefulness for every day classroom activity, should be included in the last part of the course. The tutors are

asked therefore, to put down their opinions after each use of a method on a meta-planning card.

The sample topics are consciously focused on the topic “Visual learning” and “Use of visual Methods”. When using the methods, the topic is worked on in a content-relevant way. Every visual method has a different means of application and opens a new access to a respective topic. Through the application of different methods, the topic is continuously structured anew and thus illuminated from different viewpoints. The transfer-possibilities can be reflected upon and noted.

03:15 – 03:30 pm Preferences of learning styles

Presentation, change of experience, discussion in the entire group

Here we should briefly present in abridged form the learning preferences. This is less about the conducting of the test, but rather in this section the “Creative Commons Licensing” is presented online.

Experiences of the tutors shall be taken up and discussed.

03:30 – 04:00 pm Searching the free image Creative commons and free clipart Practical hints concerning image investigation

In this section the “Creative Commons Licensing” is presented online. The individual license elements will be roughly explained.

Creative commons (cc) has existed since 2001 and provides licenses which give copyright-holders the possibility to decide how their works can be used, i.e.: copied, passed on and much more about the sensitizing and reflecting of the individual learning preferences through the tutors.

As a user of cc-contents, you have security about the legal forms of usage and can use photos free of cost, while being legally protected. Any license is obtainable in different languages, as a summary in an understandable form

This section should make clear to the tutors on the one hand the principles of research of copyright-free pictures, symbols and icons and yet encourage use of pictures in the classroom generally.

The most important components of creative commons licenses:

- Attribution (“by”): Source-identification; only when the author is named, the work may be used.
- Share-Alike (“sa”): Modifications must be posted under the same license as the original. Only sensible without „no derivatives“.

- No Derivatives (“nd“): The work can only be used as original, i.e.: totally unmodified.
- Non-Commercial (“nc“): The work or its modifications must not be used for commercial purposes.

These components are processed into pre-formulated, immediately valid licenses. See details under <http://creativecommons.org/license>

Works with the denotation „pb“(public domain) usually are not subject to copyright law. Unlike the U.S., in Germany and Austria complete lack of copyright (e. g. for common benefit) is not possible. Hence, photos which are not subject to copyright in the U.S. may well be legally protected in Germany.

Free clipart: A selection of good web-sites

Finally some picture database files of the internet are shown to the participants

- **Yotophoto** - www.yotophoto.com: Very useful site for searching for license-free photos.
- **Flickr** - www.flickr.com/creativecommons: More than seven million different pictures to be found under so called „creative commons license“.
- **3D Cafe** – www.3dcafe.com: Really big collection with 3D-models, bullets and buttons
- **NASA** – www.nasa.gov/multimedia/imagegallery: The pictures are especially useful as basic material for buttons, banners and more ...
- **NOAA** – www.photolib.noaa.gov: Some excellent nature photography, suitable for many illustration and modification purposes.

04.00 – 05.00 pm Transfer, evaluation

Discussion, individual work & work in the entire group

In the final round, the individual methods which were presented and applied will be evaluated by the tutors with regard to application and usefulness in everyday life in the classroom. Above all, the advantages and disadvantages of the respective methods and suggestions should be documented. The tutors should also develop examples on how to apply the methods. Essential needs regarding the use of “Visual Learning” in institutions should also be discussed,.

Here documentation of the results is carried out with the programme Mindmanager. The advantage being that the methods can be efficiently evaluated by the tutors according to their use because compared to the meta plan technique, it is possible to attain a more rapid visualization and a better control by the moderator.

Notes regarding the institutions and target groups

The conception of the workshop, took the available resources of the institutions into account. Methods, which would represent a larger financial expense for the institutions, such as a mediator, were not presented. The computer-supported “Goal

Based Scenario” can also not be realized for target groups including people with literacy difficulties, migrants, and/or participants in integration courses. The focus here is placed on methods, which are relatively simple and can be implemented with little means. The presentation of the methods “Open Mind” and “Free Mind” seem relevant, since they can be used by teachers for the preparation of teaching materials.

IV. Conclusions and recommendations

Visual learning entails the set of skills involved in interpreting images. It is similar to linguistic literacy in that it requires the student to draw on skills they already have. Some learners need to ‘see to learn’; while others need to develop visual skills, i.e. they need to ‘learn to see’.

Adult literacy has in the past drawn heavily on visual materials to bring forward reading and writing skills. The explosion of images to which adults are now exposed requires tutors to revisit the concept of visual learning and to see it as a ‘needs-based’ approach. It is necessary to enhance everyday learning through practical application in the student’s life.

This full day workshop will:

- Define what visual learning means for the adult student
- Raise awareness about visual learning and visual literacy
- Look in detail at methods that allow students to address learning needs through visual strategies.

The occupation with the subject “Visual Learning“ meets the general approval of the tutors. They are very much interested in creating a significant connection to practical everyday life. This is aimed at awareness of and trying out methods and of transfer possibilities.

Emphasizing interest on the part of the teachers is what the practical part of the workshop delivers. Methods of visual learning are represented and applied by the participants. It was initially discussed in the end round and evaluated with regard to application in class. The theoretical part of the workshop (Session D) is not as relevant for practice in class but it is on the other hand important to gain insight into the theory. The cognitive acquirements offer a better understanding of the methods and their application possibilities.

Experiences of the teachers concerning the visual competence

In these workshops the teachers confirmed the presented results, especially the visual preference of the course participants. The teachers demonstrated in class that visual competence of the learners could compensate for other deficits. For example word pictures are often preferred to analytical reading. The orientation function of pictures was confirmed by the tutors of the teachers’ course

Furthermore the teachers emphasized that in everyday course life a “visual inner differentiation” has to be made. Each teacher therefore needs varying input. Visual competences should be consolidated in the individual courses because this kind of learning is not common. The learners should be generally more sensitized for pictures. Learning styles of non-visual participants must be taken into consideration. The participants may have little methodical knowledge and this is reason to make the prevailing method more transparent.

Pictures that aren't clear present students with problems. The focus here should be on the essential. The pictures should not be overloaded and shouldn't place too much demand on the students.

Successfully applied methods in their courses are e.g. a tutor conducts the following methods as memory training: she glues cartons with pictures and show these in quick succession one after the other. The students afterwards describe what they have seen. The methods instruct on skill, to perceive individual details.

Success in learning generally demands a certain vividness or clarity. In order to better explain the preposition “on”, a teacher climbs on to a chair, to create a picture in the minds of the students. Mime exercises would also be effective here. The tutors in Bonn also use hand signals for support, to clarify sentence constructions and as a means of emphasis.

Some teachers like to use photo montages to stimulate the students. It is recommended where possible, to use pictures of the course participants since this encourages identification with the learning material.

The “Storytelling” method is successfully practiced by some teachers in class. Here the world of experience of the students can be taken into consideration. Topics dealing with “What happened yesterday?”, or “What did you do at the weekend?” Another good variation would be to read a story aloud and afterwards to have the learners paint a picture representing it.

Some teachers have positive experiences with relaxation exercises like breathing techniques. This, however, should be made suitable for the target group.

In the workshops the teachers also gained experience with visual learning in other countries. In this connection, instructive videos and slides were mentioned in the German Democratic Republic. In Poland slides are said to be commonly used. Speech-laboratories are very common here.

Evaluation of the visual methods by the teachers concerning their usage in the classroom

Generally the teachers estimate the possibility to combine individual visual methods, such as clustering, mindmap, cognitive map and storytelling. They are well suited to structure certain topics, and can come into usage as part of a group project. Insofar as one is dealing with open methods, the students could not be presented with any finished examples. Here the teachers recommend preparing a blueprint of a mindmap on paper with a main arm and various minor arms, to clarify the procedure.

This could be easily done with the “mindmanager” and “freemind” programmes⁴. When choosing other methods the level of the courses had to be taken into account.

Clustering: This visual method is highly regarded by the teachers, since it is usable in all classes. The usage of this method would be well suited above all for structuring and summarising learning materials. The method would stimulate the students and contribute to a relaxed learning atmosphere.

Mindmap: With this method similar advantages are noticed by the teachers, as with clustering. Mindmaps are especially well suited for structuring learning materials. However, this method is supposedly not as open nor easily accessible as clustering. The programmes “mindmanager” and “freemind” would be well suited to prepare examples for lessons.

Cognitive Maps: These methods are well suited for giving oneself an intuitive approach to a topic. The openness of the methods could, like clustering, contribute to the stimulation of the students and achieve a relatively good processing depth by the students. The respective topic has to be carefully chosen, so not to demand too much of the course participants.

Morphological Box: This method was tested very extensively in the workshops. The morphological box would demand creativity and motivate the students. Through clear combination of possibilities or characteristics, new ideas could be generated. This approach would generate a complete intake of a topic. The method could in many ways find usage, among others, in the preparation of an assignment, like “Preparing a party” or “Composing a fairy-tale”. In addition to these many word collections would be generated, grammatical exercises, sentence building, and different tense forms clearly explained and the students prepared for tests and exercises with this method. The teachers recommend, to take the level of the students into consideration. In courses this could theoretically be carried out with pictures and symbols.

What kind of support do the teachers need to integrate visual learning into their teaching?

- In practical terms, specific computer and technology training for visual learning for tutors and students. This suggests learning centres should provide more computer equipment and access to computer rooms even when not part of a scheduled computer programme.
- Central image banks accessed through CD-ROM or via the Internet would be important.
- Colour printing for reproduction of images – images lose their impact when printed in black and white.
- Furthermore workshops to allow tutors with a specific interest in the area to develop a depth of knowledge in the area of visual learning. These tutors could become mentors in their own centres and this would help new and inexperienced tutors to develop visual learning methodologies.
- A selection of recommended reading to be available on the subject of visual learning.
- More emphasis in initial tutor training programmes on visual learning.

⁴ The programme Freemind is available on the Internet free of charge.

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