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Innovative and participative learning-teaching approaches within a project based training framework

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InWEnt

InWEnt – Internationale Weiterbildung und Entwicklung gGmbH (Capacity Building International, Germany) - is an organisation for international human resource development, advanced training and dialogue. Established through the merger of the Carl-Duisberg-Gesellschaft (CDG) e.V. and the German Foundation for International Development (DSE), it can draw on decades of experience accumulated by the two organisations in the field of international co-operation. Its practice-oriented programmes are directed at specialist staff and managers, as well as decision-makers from business and industry, politics, public administration and civil society from all parts of the globe. Its Development Policy Forum arranges high-calibre international policy dialogues on subjects of current concerns in the field of development policy.

Division 4.01 of InWEnt has its seat in Mannheim and conducts on behalf of the Federal Ministry for Economic Cooperation and Development (BMZ) advanced training programmes. Under the banner of "sustainable development", its work focuses on questions of technology cooperation, system development and management in the field of technical and vocational education and training. Its dialogue and training programmes are targeted at decision-makers from the public and private sectors, junior managers and multipliers from vocational training systems.

Introduction

From 2003 onwards, InWEnt´s Division Technological Cooperation, System Development and Management in Vocational Training is to present a series on everyday practice in vocational training.

The intention of this series is described in the title itself ("Beiträge aus der Praxis der beruflichen Bildung" = series on everyday practice in vocational training). The division aims to support its programs of international personnel development in the above-mentioned areas with technical documentation in both printed and electronic form.

These reports

- originate in the partner countries, taking into account specific situational demand
- will be tested with and for experts in vocational training in the partner countries in conjunction with respective practice-oriented training programs on offer, and
- with a view to global learning, will be improved and adapted prior to publication according to the recommendations of the partners or the results of the pilot events.

Thus, the Division Technological Cooperation, System Development and Management in Vocational Training is applying the requirements of InWEnt´s training program to its own products in the above faculties: i.e. these can only be as good as their practical relevance for the experts of vocational training systems in the partner countries.

To this effect, we look forward to critical and constructive feedback from all readers and users of these special series.

This manual is one of an entire series of InWEnt publications that have been produced as a result of training seminars and courses carried out in cooperation with the vocational training institute SENATI in Peru.

Our special thanks go to Prof. Tippelt of Munich University and Mr. Amorós from the "International Cooperation Office", who both made invaluable contributions to these activities.

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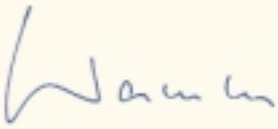

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1 Introduction

applying new methods

Current requirements in the areas professional qualifications and skills development call for the implementation of new analytic and responsible learning-teaching techniques focused on specific objectives. It is therefore necessary to design learning situations in which trainees/students are permitted and encouraged to:

- draw up their own objectives
- develop diverse learning strategies
- establish complex inter-group relationships
- operate with increasing autonomy

selecting learning-teaching strategies

Within an action based training framework, learning-teaching strategies should be designed to:

- Develop students' ability to present and analyse specific themes. Simple knowledge acquirement is not enough. It is essential that students learn to analyse and evaluate what they have learned, in order to "mature" their thought processes and improve practical skills.
- Encourage students to act independently and responsibly.
- Motivate students, helping them to improve their own methodological abilities, becoming less trainer dependent, as well as reducing the trainer's direct participation in the learning process.
- Stimulate professional action skills learning through the implementation of "real-world" tasks and exercises.

teacher based learning

In general, professional learning-teaching strategies can be divided into two groups. As can be seen in Figure 1, Training methods, the first of these groups includes methods that can be classified as "programmed learning" or "development based learning" where the trainer takes an very active part in the process, with students assuming a more passive role. Some examples of this, within a traditional programmed teaching framework, are, amongst others, the magistral lesson method, the demonstrative method and the 4-stages method. In all these cases, students are expected to accept, more or less without question, the trainer's authority, and to assume a passive attitude.

student based learning

The indirect methodologies, on the other hand, are based on student based knowledge acquirement. Magistral explications are replaced by situation-based learning. Students themselves search for information, whether through the study of printed material (texts or manuals) graphs and figures, using "real-world" examples, or through carrying out group-work exercises.

Student based learning methods are generally centred around group activities, practical exercises, simulated cases, etcetera, involving all members of the group. These methods include activities such as role-plays, project work, the guidance textbook method, computer assisted learning, situational role-plays, active structuring, conceptual mapping, self-discovery learning, case studies, etcetera.

student innovation, initiative and responsibility

Action-based learning moves away from the traditional trainer as opposed to student based learning model – in which direct student participation is limited to listening and repetition. The idea of action-based learning models is that, after a period of preparation, students will be motivated to develop their creative, innovative and initiative-taking skills, while assuming direct responsibility for their actions. Learning is no different from other processes in that it has a curve of development, in which students assume a progressively active role. The teaching-learning process becomes an initiative-taking skills development process.

the trainer's changing role

Moving away from a conventional (traditional) training methodology towards one focused on actions also requires changing the role of the trainer, who becomes a moderator, adviser or assistant.

From a methodological point of view, this change undoubtedly represents a great challenge for all teaching staff, as the revised pedagogical focus calls for the implementation of new teaching-learning methods capable of facilitating and actively promoting a student based training process.

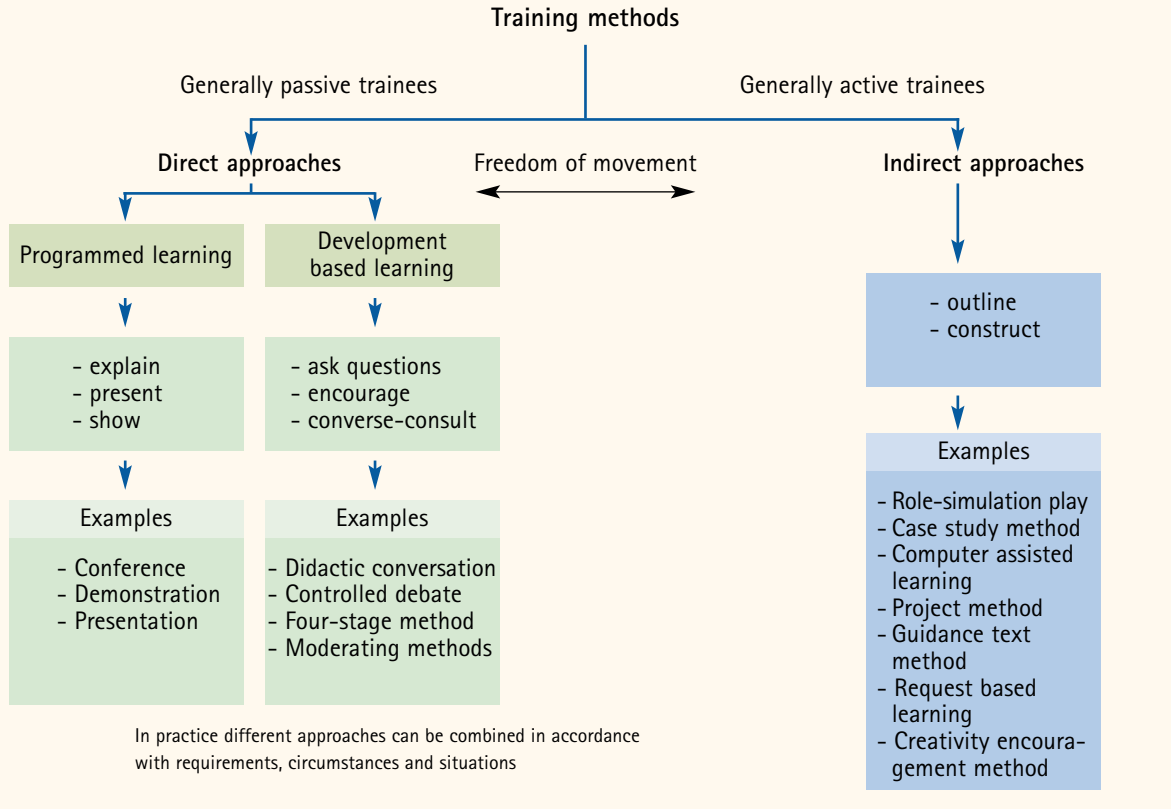
new ways that complement traditional methods

It is not intended, however, that these new methods or ways of learning replace traditional forms, rather that these be complemented. Nor is it suggested, as some pedagogues have proposed, that traditional learning techniques disappear; these are still relevant for concrete learning situations. But the new innovative and participative methods cannot be ignored, promoting as they do a creative and self-directed learning process. This can be seen in current teaching trends, where different methods are combined, depending on individual circumstances and learning situations.

designing your own action strategies

The results obtained from any learning-teaching process will largely depend on the success or failure of the application of each individual or combined method. Obviously, there are no easy "recipes" that can be applied mechanically to each and every process. The examples of teaching-learning methods presented in the following sections are intended to serve as no more than a rough guide. Each trainer should design his teaching strategy in accordance with his own style plus the dynamics of his group of students and each of its members.

Figure 1



2 Feedback

brief description

Feedback allows teachers to qualify their own teaching performance by means of evaluations received from their own students. Participants express their opinion about the course's technical contents, its didactic qualities, the level of interactive communication achieved, etcetera. Course managers can then use the information obtained to reflect on and improve trainer performance.

2.1 Procedure

the rules that govern feedback

In order to obtain effective feedback, teachers must first explain to their students the reasons that make feedback necessary and of the way the information obtained can be used. The following is a presentation of the rules that govern feedback:

- first person should be used (e.g. I think that.....)
- each participant should outline the positive and negative aspects of the course consecutively
- critical points should be expressed as concretely as possible and alternatives presented.

summary and discussion of results

The first step involves students being asked to carry out feedback. Whoever is directing the session should listen to the comments calmly, without trying to justify themselves, in any way, taking notes, asking for clarifications when required and encouraging students to suggest improvements.

At the end of the feedback session, a summary of the obtained results is made, which should lead to a period of analysis and discussion, in which any possible corrective actions are defined.

2.2 Functions

receiving feedback

Receiving feedback enables trainers to:

- Motivate students to participate in the learning process and promote collective responsibility.
- Clear up any unresolved points.

Receive input about the effect and acceptance of the course from a didactic content based viewpoint.

giving feedback

Giving feedback enables students to:

- Present and submit to analysis their own ideas about the course.
- Consider suggestions about their own performance as course participants.

2.3 Evaluation objectives

- to identify weaknesses detected in different parts of the course
- to reflect on one's own didactic, methodological and communicative abilities
- to consider other possible ways of doing things
- to define ways of making the teaching-learning process more efficient

2.4 When to apply feedback

in any time during any given course

Trainers can ask students to give feedback at any time during any type of course or seminar. In practice, however, the process nearly always takes place at the end of a course seminar, in order that a view of the complete process be obtained.

feedback halfway through a seminar

Alternatively feedback can be implemented halfway through a course seminar. In this case, the opinions obtained will also be based on students' long term accumulated experiences, with the advantage that the recommendations or suggestions obtained can be taken account of during the remainder of the course.

2.5 Framework conditions

Course:
> Type of course: open
> Number of students: open
> Location: open

Length:
> From a few minutes to an hour, depending on the objectives.

Resources:
> Generally, feedback can be given without any specialist material.
> In the case of alternative models, extra material may be needed.

2.6 Recommendations for teachers

> The feedback process should be carried out in a relaxed atmosphere.
> In order to avoid delays, difficulties or negative responses from students, it is essential that the rules govern feedback are respected.
> A feedback session carried out halfway through a course is often more gratifying for students that one scheduled for the end of the course, but only when the trainer or lecturer takes account of the results obtained during the remainder of the course.

risk influences opinions

It is debatable whether or not a trainer should express his opinion before receiving his student's input - putting forward his own view of the positive aspects of the course, plus what he would change should he repeat it. While this may encourage students to form their own criticisms, there is a risk that their opinions, including those that deal with course content, may be influenced by what their trainer has already said.

2.7 Alternatives

Alternative 1:
> Feedback can also be used to comment on a written work.

Alternative 2:
> Numbered grading: Students can be given a fixed number of points to grade to predetermined areas of the course, such as, moderating, use of recourses, technical content, general atmosphere, etcetera.

Alternative 3:
> Feedback written on cards: The positive aspects of the course are written on one side of the card and the negative aspects on the other. The trainer collects the card, programming a participative evaluation for the next session.

Alternative 4:
> Feedback by questionnaire: This is another way for the trainer or lecturer to analyse what he or she considers to be the most important aspects of the course or seminar.

Alternative Methodologies:
> "Packing your bags" Flash

3 Active structuring

brief description

Active structuring attempts to conceptually structure a course area or theme through the application of a variety of social concepts and by diverse types of visualization according to the structure needed.

3.1 Procedure

> Explain the exercise and the way it should be carried out.
> Give students pre-prepared cards (30 max.) which should include points related to a theme already covered in class.
> Set up the working structure (with, if necessary, help from the moderator / trainer).
> Each group's structuring proposals should be presented, by one or more spokespersons, in a session involving all class members.
> Any final clarifications should be made, prior discussion of the structuring proposal.
> If necessary, other possible structuring models or evaluations of the trainer or moderator's performance can also be presented.

3.2 Didactic functions

> to encourage cooperation with others and to prepare ideas for group discussion
> to obtain a general view of a theme
> to pre-structure specialised areas
> to form a structured summary of the what has been learned during the course
> to arrange information in order to summarise it
> to motivate and encourage students
> to promote an awareness of specialized information analysis

3.3 Didactic objectives

> to learn how to dynamically structure and analyse information
> to be able to organize existing information by means of structuring
> to understand conceptual structures
> to be able to present information clearly and precisely
> to recognise and be able to apply the precepts of knowledge organization and structuring
> to promote and encourage cooperation

3.4 Application possibilities

> The structuring of conceptual knowledge.
> The promotion of a focused learning process.
> The forming of more creative didactic methods which remain work and analysis intensive.

3.5 Framework conditions

Course:
> Type of course: seminar, course
> Number of students: six upwards
> Location: any space that permits chairs to be moved in order to form small groups of students

Length:
> A minimum of 50 minutes for four groups (15 minutes for the structuring phase, 5 minutes for comments from each group and 15 minutes for the final discussion

Resources:
> A4-sized paper, whiteboard or pinboard

3.6 Recommendations for teachers

> Structuring should form the centre of the process rather than being a pre-established result.
> Information analysis is a specialised process due to the fact that active structuring precludes following any pre-established course of action.

3.7 Alternatives

Based on social structures:
Alternative 1:
> Active structuring as individual work.

Alternative 2:
> Active structuring as pair work.

Alternative 3:
> Active structuring as group work - culminating in a presentation and the comparing of the results obtained in a session involving all class members (Full Session).

Based on diverse teaching material:
Alternative 1:
> The base materials are texts as opposed to concepts (this alternative requires more time)
> Learning models are developed by the students themselves rather than being pre-set.

Alternative methodologies
Conceptual mapping, metaplan method

4 Brainstorming

brief description
The brainstorming method consists of processing students' spontaneous ideas about a pre-set theme, or problem which has been determined without qualitative comments from the trainer. The most unusual views can be included, in order to provoke diverse and original problem-solving ideas.

4.1 Procedure

presenting questions or problems
Precise presentation of the questions or problems raised by the group, including, if necessary, visualisation by means of a whiteboard or flipchart.
The following comments deal with the conceptual rules of brainstorming:

> The thoughts expressed should be creative (not self-critical).
> Neither criticisms about the ideas of others nor explications of one's own ideas should be admitted (all ideas should be registered, including repetitions).
> Quantity takes preference over quality – the more ideas expressed the better.
> Each student should be encouraged to express his or her ideas freely and spontaneously.

students express their ideas
Students can express their ideas either in a predetermined order or randomly, but this should be established beforehand (oral brainstorming).
The moderator or a nominated student should take note of and resume all the ideas expressed, using a whiteboard or transparencies.

don't rush to interrupt the flow of ideas
The flow of ideas should not be interrupted even when it begins diminish. To begin with, only conventional ideas are forthcoming; it is later that original ideas emerge.

analysis of results
Finally, the results obtained should be analysed (for example, by means of active structuring or a group discussion).

4.2 Didactic functions

> to ignite a "flame of ideas" or, in other words, to stimulate student's creative capacities
> to create a relaxed and fear-free atmosphere
> to encourage communication
> to promote the active participation of all group members
> to enable students to gain confidence in their own abilities
> to draw on previously acquired knowledge
> to present new a subject matter

4.3 Didactic objectives

> For students to discover their own ideas about a subject or devise completely new ways of looking at a problem.
> to show clearly the relationship between a diversity of ideas and the forming of problem solving alternatives in the shortest possible time.

4.4 Application possibilities

Due to its underlying creative and participative features, brainstorming is an extremely useful tool:
> to introduce new subject matter
> to prepare far-reaching and diverse didactic units
> to gauge students' previously acquired knowledge
> to stimulate the planning of a seminar or the work involved in its implementation
> to apply structuring to problem areas
> as a creative search tool used to identify problem solving alternatives
> to search for or compile ideas
> to summarize a discussion

4.5 Framework conditions

Course:
> Type of course: seminar, course
> Number of students: up to 30
> Location: open

Length:
> Up to 30 minutes

Resources:
> Flipchart/ Back-projector
> Alternative 1: A4-sized sheets, glue
> Alternative 2: "blue-tack" or similar

4.6 Recommendations for teachers

> It is highly recommended that teachers themselves carry out brainstorming sessions with their colleagues, as a part of their own preparation process, so that new ideas and suggestions can be passed on to the students.
> If there are to be two moderators, one of these should be in charge of the moderating itself and the other with the visualisation of students' input.
> If there is to be only one moderator, he or she should ask the students to express themselves in order, one after another, waiting until all the input has been recorded before proceeding to the next participant (although some spontaneity will necessarily be lost).
> Originally, brainstorming was a technique used for problem solving. If this method is applied to a different area, the term "association" could be used.

4.7 Alternatives

Alternative 1:
> Written brainstorming complemented by the metaplan method.

The procedure is the same as that previously outlined, with the difference that students' ideas are written on cards rather that expressed orally. Students display the completed cards on a whiteboard. In this way, the other members of the group can

visualise their classmates' contributions. The ideas expressed are then arranged in ordered groups, in accordance with appropriate criteria.

Alternative 2:
> Written graded brainstorming:

The main ideas are organised in the way described above and then graded. Each student assigns a maximum of five points to the ideas he considers best. Once this preliminary phase is complete, the brainstorming process can begin.

5 Role playing – simulation

brief description

This is a game where social conflicts and group interest decision making are simulated. The subject/ conflict and the roles/situations are pre-set and the game's outcome is left open. During the role play-simulation games, students have to take decisions based on real or hypothetical model situations, defined by a set of rules that govern their fictitious reality. 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.

5.1 Procedure

Preparation:
> Presentation of the content and rules of the role-simulation game.
> 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.

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.

Evaluation:
The game's director should ask students' to reflect on the results obtained, answering for example the following:
> 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?

5.2 Didactic functions

> to commence an active and holistic learning process
> to visualise and to consider the wider implications of decision-making
> to enable the simulated reality to be experimented with

- to develop cognitive, social and attitude based abilities
- to encourage discussion based on the presentation of arguments

5.3 Didactic objectives

- to form a vision of the complexity of fields of action and decision making structures
- to be able to represent a group (group spokesperson)
- to select the most important points
- to interpret roles
- to promote decision making abilities
- to foster a capacity for reflection

5.4 Application possibilities

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

5.5 Framework conditions

Course:
- Type of course: seminar, course
- Number of students: up to 30
- Location: open

Length:
- Up to 30 minutes

Resources:
- Flipchart/back-projector, white or blackboard, chalk or markers
- Alternative 1: A4-sized paper
- Alternative 2: "blue-tack" or similar

5.6 Recommendations for teachers

It is very important that the rules of play are clearly formulated, for example:
- The initial situation and the rules of play should not be modified.
- The game's director should open and close play.
- The content of the group guidance sessions should be registered.
- Communication between groups should be in writing and pass through the hands of the game's director.
- Questions should be directed to the game's director throughout the process.
- The game's director should be careful to respect the rules of play.
- The game'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 game's director should suggest pausing the game at certain points in order to stimulate reflection.

5.7 Alternatives

Alternative 1:
- Communication can be programmed to take place during a pre-structured phase of the game.

Alternative 2:
- Play can remain open during a preliminary phase of the game.

6 Group work

brief description

Focused as it is on both participants and tasks, group work within a small group framework can be an ideal way of including a social element in learning themes.

By means of an orientation session involving all the students, a large group can be divided into several small ones. This is known as the "closed stage" and includes the designing of a general plan, the identification of objectives and sub-themes, as well as the creation of work groups. Once the authentic group work (known as the "open stage") is completed and events data and contextual associations have been analysed, another full session, or "closed stage" can be implemented, in which areas such as group information, comparison, evaluation and summary of partial results are discussed prior to the formulation of a final result.

6.1 Procedure

preparation for group work

Full session for the preparation of group work (closed stage):

> Group work tasks should be explained, using precise terms backed up by any combination of visual and memorization aids – such as a whiteboard or flipchart or group work hand-outs.
> The way that groups are to be formed should be explained (see Alternative 3).
> What is expected in the full group presentation of results session should be discussed.
> The length of the group work process and where it is to be carried out should be indicated.
> Any unclear points should be cleared up by means of a question and answer session.
> Group Work (small groups) (open stage):
> The participants carry out tasks while the moderator ensures that the group does not lose sight of the objective. If necessary, the moderator can offer encouragement and additional information as well as suggesting ideas should a group "run out of steam" (at any point in the process).
> If necessary, the moderator can encourage groups to make use of available resources, such as markers, transparencies, cards, etcetera.
> The group work should be considered complete once concrete and certain results have been obtained and when these are ready to be presented in the full session.

Full Session (closed stage):

> The order of the presentations should be pre-set.
> Each group should present its problem solving alternatives in the full session.
> 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.

6.2. Didactic functions

> to enable each student to take an active role in the problem-solving process
> to create an open, correct and objective a way of dealing with conflicts
> to promote oral expression
> to encourage self-reflection
> to sensibilize with respect to student performance as a social process
> to drill and strengthen the themes presented
> to analyse and apply newly acquired information

6.3 Didactic objectives

> to promote group based problem-solving abilities
> to use group interaction to discover and analyse new knowledge, facts, principles and structures
> to stimulate interaction and cooperation skills
> to improve communicative skills
> to deal with conflicts and tensions within a group

6.4 Application possibilities

> 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, etcetera
> to present new subject matter
> to elaborate role-plays, role-simulation-plays, etcetera

6.5 Framework conditions

Course:
> Type of course: seminar
> Number of participants: open
> Group size: maximum 6, ideal 3 or 4
> Classrooms: should offer the possibility of re-organizing the layout of tables and chairs

Length:
> From 30/45 minutes up to 90 minutes

Resources:
> For example – texts, figures, handouts with exercises, white/blackboard, pinboard, flipchart, markers, chalk, back-projector.

6.6 Recommendations for teachers

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.

6.7 Alternatives

The alternatives can be systemized based on the following areas:

Task determination:

Alternative 1:
> Work-groups with the same tasks.

Alternative 2:
> Work groups with separate tasks. Each group is assigned a different task in order to reach a common objective.

Presentation of results

Alternative 1:
> Oral presentation by one group member.

Alternative 2:
> Diffusion and visualization of results through the conceptual mapping method.

Alternative 3:
> Representation of results through role-play.

Alternative 4:
> Representation of results by posters stuck on the wall.

Group structure:

Alternative 1:
> Free selection of group members (high level of self-determination, running the risk that participants may feel somewhat overwhelmed).

Alternative 2:
> Groups formed through the application of random criteria.

7 Metaplan technique

brief description

The metaplan technique is a visualization and systemisation method based on the use of written cards. This technique paves the way for a whole range of possibilities for the continuing analysis and structuring of existing knowledge.

The first step is to distinguish between inductive and deductive processes. An inductive process, achieves systemization during a course or as the work is being carried out. A deductive process, on the other hand, consists of the working relationship between unstructured prior knowledge and previously established categories. Inductive systemization ("clustering") is outlined in detail in the following section while deductive procedure is dealt with in Alternative 5.

7.1 Procedure

writing comments about the task

Presentation of a task based on content or suggestions.
Each participant should write 3 to 5 words/comments about the proposed or suggested task in a legible script on A4-sized cards split in half horizontally. Metaplan cards should be of only one colour whilst different colours are used to identify main ideas or to represent systematic units.

Recommendations for writing on the metaplan cards:

- Write in a large and legible script.
- Use thick-tipped markers.
- Choose between capital and small letters.
- Write a maximum of one idea or word on each card.

presenting and organizing ideas

- Students should present their ideas in a full session in order of participation. The ideas should be displayed on the assigned pinboard, whiteboard or wall – either directly after the session or during it. Each presenter should try to organize thematically the idea or word written on his card, in accordance with the contents of the cards already displayed (first structuring of the cards).
- Once this process has been completed, all the students should take part in a structured analysis of the "cluster".
- Finally, the moderator should discuss or summarize the obtained results with the participants.

7.2 Didactic functions

- to stimulate the participants
- to create a collective learning/work process
- to determine and activate previously acquired knowledge
- to pre-structure subject matter
- to determine students' wishes, expectations, interests, objections, ideas and problem-solving proposals
- to summarize and organize the results of a project
- to enable different points of view to be compared

7.3 Learning objectives

- to learn to structure complicated subject matter and problems
- to promote cooperation skills
- to determine participants' main interests and take account of a diversity of interests
- to become aware of other participants' previously acquired knowledge and expectations

7.4 Application possibilities

- As a tool to help participants structure their expositions, as well as offering conceptual support.
- For the presentation of new subject matter (in order to structure and to determine participants' previously acquired knowledge).
- Especially at the beginning of a class, seminar, etcetera ("warming up" - asking about partici-

pants needs, expectations, objections, etcetera).
> At the end of a course or class as an self evaluation tool for students, and as a final summary.

7.5 Framework conditions

Course:
> Type of course: seminar/course
> Number of participants: from 19 to a maximum of 35
> Classroom: immaterial; All that is needed is a working surface or wall, if a pinboard is unavailable

Length:
> Between 20 and 40 minutes for explanations for cards to be displayed

Resources:
> Pinboard/wall, cards (20 by 7 cm, of different colours) or A4-sized paper cut in half, thick tipped markers, drawing-pins for the cards, blue-tack or similar (see Alternative 4)

7.6 Recommendations for teachers

the moderator can make recommendations

> The moderator should not directly participate in arranging the cards, as he or she could over-influence the way these are grouped. Once a large number of cards are on display, it is easy to lose perspective when arranging them. In this case, if necessary, the moderator can offer suggestions (stepping back from the pinboard, saying the name of the required card, advising students to take more time, etcetera).
> If during the displaying of cards a discussion arises about "what goes with what", insisting on a perfect arrangement should be avoided, as this can quickly create frustration. Ideas and concepts that are not immediately arranged should temporarily be displayed apart from the rest.
> If the meaning or content of any of the cards is unclear, the trainer should immediately ask students what they have understood.
> The results of the collective or group systemization should be incorporated into the contents of the seminar.

7.7 Alternatives

Alternative 1:
Questions based on an individual hierarchy:
Students should arrange their metaplan cards by order of importance, including only those that they consider most important.

Alternative 2:
Anonymous metaplan cards:
The moderator should collect all the cards, taking care not to show the text (face downwards). These should then be displayed one at a time, with participants being asked how they have arranged each card that is being shown.

Alternative 3:
Follow-up work once the metaplan cards have been displayed on the pinboard:
Cards can later be moved form one place to another or rearranged (see active structuring).

8 Conceptual mapping

brief description

The centre of the conceptual map is a main idea or concept, suggesting other subordinate ideas. The centre of the conceptual map is a main idea or concept which causes a corollary effect, suggesting other subordinate ideas (aspects) which in turn may vary, being transformed into other more diverse ramifications. The conceptual map permits the representation of complex association of ideas and content, specific fields of knowledge and thematic areas, and also functions as a memorisation tool.

8.1 Procedure

> The first step is to write a word or words representing a concept, idea or subject in the centre of a sheet of paper or on the whiteboard.
> Other words, such as nouns, verbs and adjectives should then be added in such a way as to further define the main ideas.
> Participants should then reflect on whether all these conceptual words have the same level, if some are of a higher level or perhaps subordinate to others. Should this prove not to be the case, a number of branches can be drawn, "sprouting" from the initial concept, with the resulting ideas written along each of these (first level of variation from the centre).
> Each branch may continue altering as a result of other ramifications (second level of variation).
> Too many varied ideas can cause the conceptual map to lose transparency. If more variations are desired, it is best to display Level 1 subordinate ideas in the centre of a new conceptual map.

8.2 Didactic functions

> to obtain and analyse collective viewpoints
> to analyse ideas association
> to stimulate, determine and structure previously acquired knowledge
> to verify levels of understanding

8.3 Didactic objectives

> to structure complex concepts
> to represent knowledge clearly and visually
> to prepare memorization aids

8.4 Application possibilities

> to prepare, carry out and follow up on seminars
> Can be used at the beginning, during or at the end of an exposition
> to analyse texts
> to be used as an alternative form of evaluation

8.5 Framework conditions

Course:

> Type of course: open
> Number of participants: open
> Classroom: governed by the carrying out of group or individual work

Length:

> Governed by the size of course content

Resources:

> Paper, posters
> Flipchart, etcetera
> Felt tip pens or markers

8.6 Recommendations for teachers

Students should be shown different design elements, for example; using printed letters, figures, images, arrows, symbols, a combination of colours when dealing with inter-related elements, etcetera.

8.7 Alternatives

Alternative 1:
Different ideas (no branches) are written on a sheet of paper and then linked to related areas or themes (for example, by drawing arrows). Some possible associations are: definition, opposites, forms part of, etcetera.

Alternative 2:
Conceptual maps can be structured around different concepts, for example, according to hierarchical criteria, "pros and cons" debates, etcetera.

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former: Industrial Occupations Promotion Centre (ZGB) of the German Foundation for International Development (DSE) Employees: 24 Annual financial budget for international human resource development programmes: approx. 6 million euro; a further approx. 4 million euro per year are made available by federal states cooperating in joint projects Annual number of participants: approx. 950