



## An overview

# Contents

<b>An overview</b>	4
The IDEA behind the SOLOS model	4
The SOLOS model: The bridge between working and learning	4
The ACTORS: Role and tasks	5
ORGANISATION and METHODS: How can SOLOS be applied?	7
<b>The SOLOS model: What's inside?</b>	8
Logistical work: The core of SOLOS	8
What does SOLOS aim at?	9
<b>The path to becoming a learning guide</b>	10
What is expected of a learning guide?	10
Becoming a learning guide	12
<b>How does SOLOS work in practice?</b>	13
Selecting learning causes and composing learning teams	13
Working with the methods and using the principle of visualisation	14
<b>Experiences with SOLOS</b>	18
What has proven successful	18
What's left to be done	19

# An overview

## The IDEA behind the SOLOS Model

Why do tasks in logistics require more competencies in the area of the logistics process? Why do we require and expect more than the, undoubtedly necessary, subject knowledge. The continued transnational integration of logistics caused by the globalization of economic relations causes and demands the continuous development of competencies of the involved actors. Unmistakably this trend affects all levels of the company, from the shop floor to the management. The integration of competencies of the actors on all those levels is also a crucial part of this process.

What is the reason for this explicit work process orientation of further training in logistics? It has been proven that 70 to 90% of abilities needed for work are acquired informally, i.e. in the immediate context of work. Learning for work is thus actually mostly learning at work, tightly interlinked with experience gained. This fact can and should also be utilised in more structured and targeted qualifications processes.

There has been an increase in the appreciation of such learning processes that are organised in the direct context of the company. This is also due to the realisation that professional competence is supported through the right kind of experiential learning. The solution of questions that cannot be solved through simple routines supports experiential learning which takes place in the different contexts of the working world.

*Why SOLOS?  
The IDEA behind it*

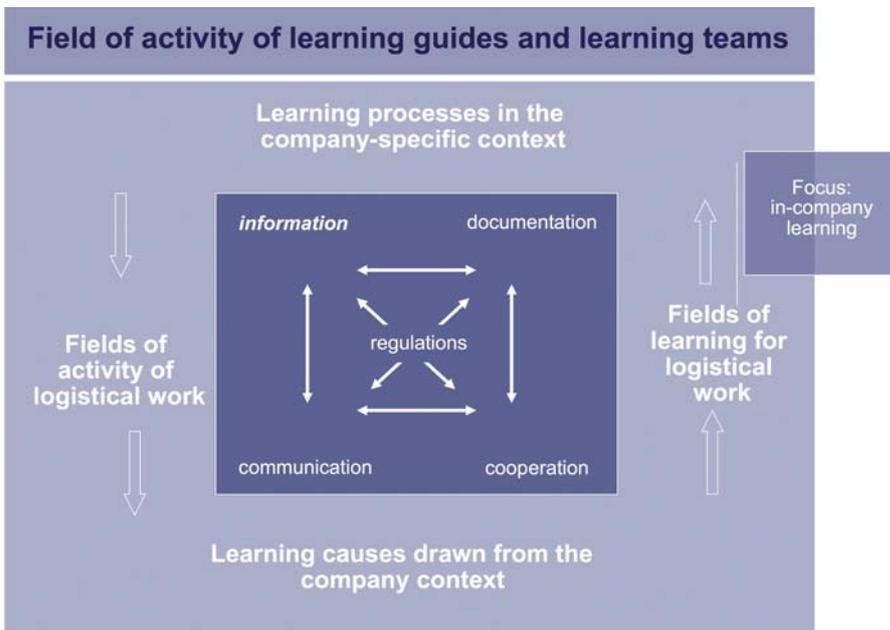
## The SOLOS model: The bridge between working and learning

The SOLOS model uses the above-described contexts which everybody has observed themselves. Our qualification model builds on the envisaged 'competence learning' which consists of the day-to-day work processes and the resulting knowledge and skills requirements. This development process can be designed especially effective in the context of work teams.

A decisive factor for the SOLOS model is the basic understanding of logistical work as the perpetual manifestation of the logistics system. Four overarching fields of activity characterise logistical work: information, documentation, communication and cooperation. These fields of activity are used in the SOLOS model and are understood as fields of learning in parts of the process.

*SOLOS: The model  
for competence  
learning in a team*

The core of the SOLOS model is the assumption that acting in the context of work and learning in the work process are two sides of one coin. The basic thought of this assumption is that the field of activity of logistical work on the one side is understood as a field of learning on the other. The aim is to promote the competence development or competence learning of all involved actors related to different but immediately company-relevant learning causes.



### The ACTORS: Role and tasks

Learning causes emerge again and again out of the company's work processes. Employees involved in these processes then work on the learning cause in cooperation with a learning guide. The work of the team aims at developing concrete possibilities for change which are then implemented in the company context. This already indicates the main actors: the members of a learning team and the learning guide and the management for ensuring the right framework.

Learning guides are the linchpin of work process-integrated learning. Learning guides should be actors from mid-management level but not the direct superiors of the learning team.

Learning guides need the right framework conditions in order to ensure the success of their work, these should be supported and sustained by company management. This particularly concerns the managements and learning culture in the organization but also the possibilities to practically implement the results of the learning team.

Further crucial actors thus include the mid-management and management level of the company. All these actors have different tasks and roles within the model; that actors (can) assume those roles is a crucial element of the overall approach and its success.

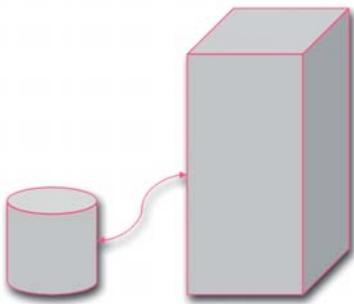
Especially if the learning guides are employees of the company, a particularly good impact is to be expected from the work with the SOLOS model. The model is designed in a way that there is a possibly close connection between the field of activity and the field of learning, between the company's work and the work in the learning team, between finding solutions and implementing them. The better the learning guide knows the company-specific situation and understands its contexts, the better – this is the experience made with SOLOS – the specific solutions bear fruit. The clearer

*The ACTORS of  
the different roles  
of SOLOS*

and more sustainable the support of company management for the work with the SOLOS model can be perceived, the more likely it is that sustainable success is to be expected. All these framework conditions support the work of the learning team and encourage the actors involved to also venture more unusual approaches and to take on new roles.

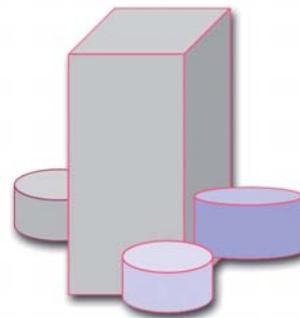
*The ACTORS need support and encouragement within the company*

### How can competence development in logistics be supported?



#### **Model A:**

Learning is understood as a process which takes place outside the company and chiefly serves the acquisition of knowledge but also the exchange of experience with others.



#### **Model B:**

Learning takes place in the immediate context of logistical work: the learning causes are sourced from the work process and the results of the learning processes are fed back into the work process.

## **ORGANISATION and METHODS: How can SOLOS be applied?**

In order to achieve the above-described level of performance and to enable the competence development of the members of the learning team, it is crucial to apply comprehensive and easy to learn methods and an organization structure which allows the learning guide and team to focus on the contents, i.e. the work on the learning cause. The SOLOS model hence encompasses three methods which offer clearly structured possibilities and tools for their work not only to the learning guide but also to the learning team. All three methods are based on the principles of visualization and are thus highly suitable for the communication process within the learning team and for the documentation and passing on of results. The methods allow for a manageable time frame of the learning sessions. If learning causes take longer, it is more successful to hold two or three shorter sessions than one long one. One of the learning guide's task is thus to narrow down the learning cause to an appropriate size and breadth which is congruent with the sphere of influence of the respective learning team.

*Three METHODS are enough for the SOLOS model*

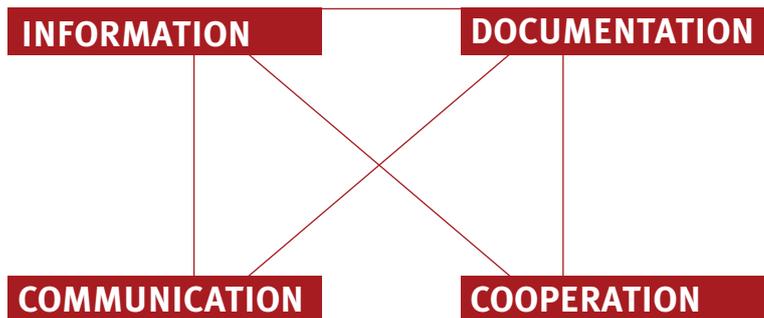
*The ORGANISATION of learning in the team: the task of the learning guide*



# The SOLOS model: What's inside?

## Logistical work: The core of SOLOS

SOLOS – Solutions for Logistics Skills – is based on the following considerations: Logistical work takes place – generally speaking – in four fields of activity, these are prevalent in all logistics processes. The quality of logistical work is, to a large extent, determined by the way in which these four fields interact.



The four fields of activity, informing, documenting, communicating and cooperating are interconnected but only gain their true meaning for logistical work if they are interlinked and relate to one another. In order to ensure this happens in a targeted and purposeful way, it is important to have some form of regulatory body. This regulatory body contains the company's standards for the work within the fields. SOLOS also allows for uncovering the characteristic interface issues which take place so often in between and within the individual fields of activity.

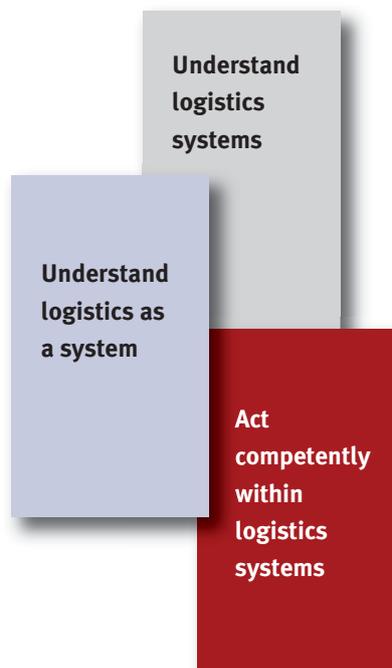
*Important basis: The four fields of activity of logistical work*

The description of logistical work in form of the fields of activity also offers a subject- and content-oriented approach to in-company qualification processes with the aim of competence development as the fields of activity are transformed into fields of learning in the context of the learning sessions. If a result has been achieved for the learning cause it relates back to the field of activity with the aim of being implemented there.

The image above highlights that the fields are interlinked through the overarching logistics process. The SOLOS model assumes – and this is confirmed by the experience gained – that the closer examination of one field of activity resp. learning increases the awareness for cause and effect which helps to avoid premature conclusions ('Nobody here does...', 'Again they only...' and now you as a reader can add other common phrases!); these never contribute to finding a solution.

## What does SOLOS aim at?

The overarching aim of competence learning in the framework of SOLOS is that the involved actors:



This logistics system understanding is by no means of theoretical character but it immediately affects the day-to-day work in logistics. We can – and this is proven by the evaluation of a number of interviews in logistics companies – assume that the work process in logistics benefits from logistics system understanding. Naturally, this understanding is mirrored in a differentiated way depending on company level and work tasks.

***What competence development aims at: logistics system understanding***

‘Competence learning’ – the acquisition and appropriate application of professional acting competence in its various shapes is closely connected to this system understanding. Do we do the right this and do we do them right? These two questions of effectiveness and efficiency of acting within the company belong to the framework of professional acting competence and highlight that competence learning chiefly relates to company-specific day-to-day action.

The training is always tied to real work tasks and aim at competence development which immediately impacts upon the mastering of processes in practice. Learning guides organize and accompany the teams.

# The path to becoming a learning guide

## What is expected of a learning guide?

Employees who combine subject-specific and management tasks perceive their role as learning guides in a way that they promote, steer and accompany competence learning in the company context and closely integrate it into the work situation. They organise the learning and training processes in the team.

The task of a learning guide is first and foremost to recognise and select learning causes from the day-to-day work. A learning cause could be, for example, that the organization of a process should be changed because the customer asks for it and the employees are to be integrated in the process of this adaptation.

Another example can be the typical increase of faults over a given period of time, or the adjustment of processes due to technical resources. Learning causes emerge in the company due to various reasons and can be used in order to work with employees in a process-oriented way in order to extend their competencies.

The learning guide works with the team which is put together for a specific learning cause. The decisive factor for the make-up of the learning team is not the allocation of team members according to their role in the structure of the company but according to their integration in the actual work process which is subject of the learning cause. If the work on the learning cause uncovers a lack of knowledge or skills in individual members of the team these can be worked on in separate training measures which could be suggested by the learning guide. The qualification increase will take place in every member of the group but develops through and within the work of the team. In contrast to knowledge, competence cannot be learned in a theoretic way, competence learning always requires the concrete connection to the situation of application.

It is important that the learning guide and the respective learning team that the learning cause is considered to be important, that the results of their work will be appreciated in the company and that their competence learning actually is of importance to the logistical work. According feedback to the actors – the learning team and learning guide – in the implementation of their results support the success of the work of the learning guide in a crucial way. Learning guide and learning team should be able to partake in the changes that result from their work which have a visible result in the detail but eventually also impact on the company's situation as a whole.

*What is a learning cause?*

*The collaboration of learning team and learning guide*

*Working in the learning team: Each actor can benefit*

As learning guides are ‘internal actors’ with management function, they have the possibility to design company- and task-specific learning situations and above all ensure that:

- the close connection between the learning and application situation the loss of results when transferring them to implementation stage is as low as possible (which is supported through gaining the learning causes from real work situations)
- competencies can be practiced to the degree of appropriate involvement and are then also required in real work situations (which is why the close link to personnel and organizational development is of importance)
- a sound transfer climate is put in place for the transfer of results (competence learning whose results do not arrive in the logistical work processes misses its aim)

*Use the results of the learning team in the company!*

In the framework of their management function, learning guides thus continuously observe the interplay of the influences of the organization, the tasks and persons and develop specific ideas about which competencies are required from their workers and should continue to be developed. They act as the hinge between the different learning teams and company management, a challenging task which should be integrated in a supportive organisational culture.

### Direct and indirect points of reference for the work of the learning guide

#### Area of in-company learning

The learning guide selects – together with company management – learning causes, works on them with the learning team and achieves a result which can be implemented.

#### Area of personnel development

The manager conducts talks with employees in the company-specific framework, for example annual development talks and includes the competence learning of the employee.

#### Area of organisational development

Learning team and management are responsible for the implementation. They are supported by the learning guide, if required.

## Becoming a learning guide

The above-described basics help the learning guide to develop an idea of his task and role: He is no the teacher, he is not the boss, he is not the coach but the guide of a team which he supports through his methods and organisation. The best way to learn to be a guide is to try it, to get to know the three methods and apply them to different learning causes. We have developed the following structure for learning guide trainings:

*The entry to working  
as a learning guide:  
Training together  
with others*

The image shows a printed agenda for a workshop. At the top left is the EUCOLOG logo, which consists of a red circle with a white 'C' shape inside, followed by the word 'EUCOLOG' in a bold, sans-serif font. To the right of the logo is a solid red horizontal bar. Below this bar, the title 'Agenda for the learning guide workshop in Paris (20/21 June 2011)' is centered. The agenda is divided into two days. The first day, '20. Juni', starts at 09:00 with a welcome and introduction. It includes a question round at 09:15, a presentation of SOLOS methods at 10:00, and group work starting at 12:00. The second day, '21. Juni', begins at 09:00 with group reporting, followed by another learning cause session at 10:00, reporting at 12:30, a discussion at 13:00, a summary at 13:45, and ends at 14:00. At the bottom left, there are logos for the European Union and Leonardo da Vinci, with the text 'Education and Culture' and 'Leonardo da Vinci' below them.

**EUCOLOG**

**Agenda for the learning guide workshop  
in Paris (20/21 June 2011)**

**20. Juni**

09:00 Welcome and introduction of participants

09:15 Question round on the preparation material handed-out to participants prior to the workshop  
Discussion until 10 am at the latest, everything that remains unclear can be discussed individually in the afternoon or after the workshop

10:00 The three methods of SOLOS in form of examples  
(The charts are given to all participants as part of the minutes. Questions of the participants can be discussed immediately.)

12:00 The participants build three to four groups, each groups selects one learning cause to work on. They are supported in the selection of the most adequate method. All groups report on their results at the end of the first day of the workshop. The first day is concluded by a brief summary of the moderator.

**21. Juni**

09:00 The groups continue their work with the learning cause until they can conclude it by compiling a to-do-list. All groups report their results.

10:00 The groups select another learning cause to work on, this time using a different method.

12:30 Reporting

13:00 Discussion of open questions, how to continue to work with SOLOS

13:45 Summary

14:00 End of workshop

The moderator advises the group work and briefly sums up the results of the reporting. The participants receive minutes which contain the examples and the results of the group work.

   
Education and Culture  
Leonardo da Vinci

Together with the preparation material mentioned in the agenda, the introductory charts and committed and interested participants, this workshop structure and the according time frame have proven to deliver good results so that the participants can continue to work with the methods and gain an understanding of the role of the learning guide.

# How does SOLOS work in practice?

## Selecting learning causes and composing learning teams

Learning impetus – learning causes – are occurrences and structures which from the day-to-day work and create an opportunity to learn. Learning causes arise from different situations. We have used those situations as a basis for a simple categorisation. In the SOLOS model we distinguish between situational and planned learning causes. Situational learning causes arise from a given situation in the company. They are typically characterised by a specific constellation in the process, in the time frame, in the interaction of persons. They are not necessarily permanently present but keep recurring and result in certain consequences. These can lead to faults, quality losses and often to open or hidden conflicts and a loss of trust within or outside the company. These examples highlight that it is necessary that experienced managers have a certain level of sensitivity and overview to recognise the cause of such situations.

*Different  
categories of  
learning causes*

Examples of such learning causes taken from in-company experience highlight that more often than not they involve day-to-day contexts. Transforming those into learning causes can be particularly fruitful if the actors in the company have already become used to the situation as it is. The potential for change and improvement hidden in these situations often appears to be submerged in the status quo.

### Examples for learning causes in logistical work

<b>Situational learning causes</b>	
<b>Cause</b>	<b>Formulation of the aim of working on the learning cause</b>
Accidents involving hazardous goods	Professional handling of accidents (This refers to the overall situation of an accident not only the immediate occurrence)
Day-to-day routine problems	Efficient and effective processes
Demeanor on the telephone	Competent demeanor on the phone
Securing cargo	Better safe than sorry
Day-to-day interaction problems	Together we stand stronger
Problems with customer	Stay calm!

Planned learning causes involve predictable changes. The learning cause can thus be worked on in advance so that problems can be avoided or kept to a minimum prior to the implementation of changes. The following examples for such learning causes show how the overall planning and preparation process and learning in the work process can be integrated. These learning causes also offer the opportunity to involve actors of the learning team and their experience in the reshaping of processes.

<b>Planned learning causes</b>	
<b>Cause</b>	<b>Formulation of the aim of working on the learning cause</b>
New customer	Integration into operative business processes
Re-structuring of a department	New processes – new tasks
Integration of new workers	Welcome!
Re-structuring of shunting operations	More efficient and effective processes

It has been proven that the members of learning teams do not have any difficulty to work with learning causes of different dimensions as long as they are directly sourced from their company-specific situation.

*The close connection to everybody's work contents: important basis for working on learning causes*

### **Working with the methods and using the principle of visualisation**

The SOLOS model offers different methods for working on learning causes. The learning guide knows and understands the possibilities offered by those methods.

The methods should meet the following criteria:

- They should be easy to handle for working with the learning team
- They should effectively support the communication within the team without restricting the contents
- They should be appropriate for a tight time frame
- They should visualize the process and results of the learning session
- The results should be visualised in a way that also makes it comprehensible to others.

The three SOLOS methods were not newly invented for the learning model but were adapted to its needs. Each of the three methods uses a specific form of visualisation: the joint work of learning guide and learning team is transformed into a concrete image. Using this form of visualisation also enables the discussion of more difficult issues; conflicts can be named directly and worked on.

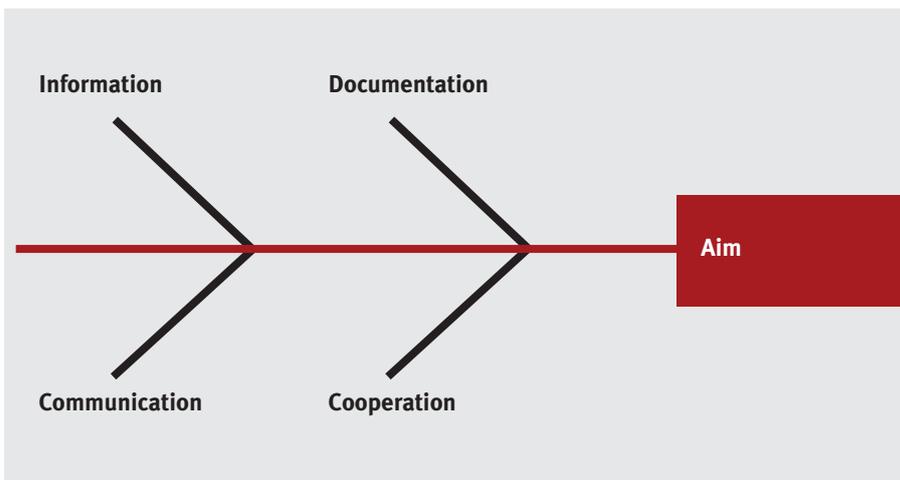
If there is no “beating around the bush” and the learning team focuses on the concrete learning cause the work of learning guide and learning team can achieve the necessary reference to reality. The results achieved thus have a better chance of being successfully implemented into the process of logistical work.

**All three SOLOS methods work with the principle of visualization**

A good motivation and communication culture should exist are be aimed at in the respective learning team. This is a precondition for the structured work on the learning cause.

The fish bone diagram – invented some 50 years ago in Japan by Kaoru Ishikawa, thus often referred to as Ishikawa diagram – has been used in companies and other organizations for decades and has been applied in various modifications. In SOLOS we use it as follows: logistics system competence manifests itself in the four fields of activity – information, documentation, communication and cooperation. The four branches of the fish bone were named accordingly.

**The “fish bone”:  
A tried and tested method, adapted to fit the needs of SOLOS**



The fish bone diagram is typically used in situational learning causes (increase in faults, problems in existing processes, etc.) as it enables the learning team to swiftly move from the learning cause itself to finding potential reasons for the unsatisfactory situation and ideas for solving it.

Another method, the pictographs, aims at visualising processes and sub-processes and in doing so, depicting the status quo and the target situation. This is done with the help of cards which show, in form of pictographs so not using language, actions and jobs in a simplified image. It has proven successful to add short comments to each pictograph in order to be able to discuss the specific characteristics of the respective process.

**The pictograph method: Also adapted for the needs of SOLOS**

**Examples for pictographs which refer to the four fields of activity of logistical work**



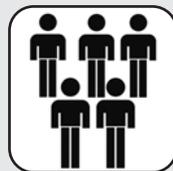
verifying written information and documents



calling



entering data into forms, etc.



working in something in a group



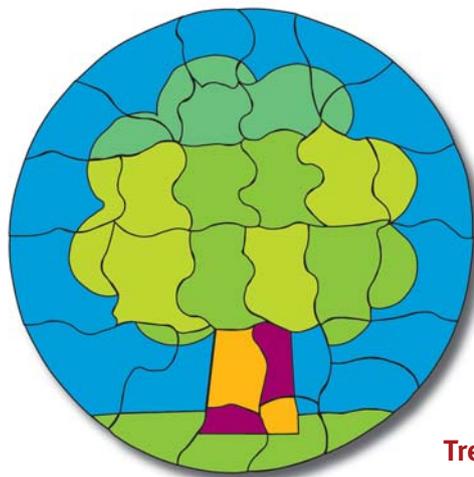
Documenting and archiving information



discussing something

The pictographs are particularly suitable to planned learning causes (all pictographs are included in the package “Methods” on p. 21).

The tree jigsaw puzzle is probably the most uncommon of the three methods but a very effective one, e.g. in order to work on the issue of interface problems. By using the tree jigsaw, the learning team can recognise the smooth running of the logistical system and also identify disturbances which work against the target status.



**Tree jigsaw puzzle**

## Summary

The fish bone diagram can help visualise interrelations between the fields of activity of logistical work.

A series of pictographs can depict processes and sub-processes enabling the comparison of actual versus target or before vs. after state. The members of the learning team can vary the degree of detail of the depiction according to their needs.

The jigsaw puzzle visualises the positioning of actors and groups as well as structures in a process with the aim of overcoming interface problems.

The joint characteristic of all three methods: They offer possibilities for visualization, support the work of the learning team through offering an image. The aim is to use contexts, processes and positions for work process-integrated learning.

The learning team participates in the implementation of results and immediately experiences changes and success.

The instructions for working with the three methods can be found in the package “The methods”, it includes the individual work steps and examples.



# Experiences with SOLOS

## What has proven successful

In the framework of the EUCOLOG project we conducted learning guide trainings in different countries, including Germany and Austria, the Czech Republic, Slovakia, Spain and France. We have made the following experiences:

- The SOLOS methods are applicable independent of national specifics, this applies to all countries we have worked in so far.
- The reference to the three exemplary learning outcome profiles for logistical work supports the actors to strengthen their ideas and aims for promoting the desired competence development.
- The participants gain an own understanding of the methods and a confident handling of the methods best when confronted with learning causes sourced from their own area of activity.
- The experience gained with the methods also enables the combination of methods for specific learning causes. Sometimes the consecutive use of two or three methods enables the learning guides to understand the potential of each of the methods for developing results and supporting the learning process of the team.
- It is important that the learning guide “trusts” the methods and increasingly learn to depend on its structure-giving impact. This happens faster if – at least initially – the learning guide can share his work and experience with a peer learning guide – team work is also important for learning guides.
- The visualising effect of the SOLOS methods is crucial. Working with language only and without a picture does not work. The actual design of the visualisation is up to the learning guide and the team. The fish bone diagram, for example, also works with flip chart sheets hung up next to one another for each field of activity.
- The documentation of the work of the learning team is very important. Firstly, in order to secure the results and their follow-up process. Secondly, in order to pass on the results to others in their original form. Photos are crucial!
- A direct superior shouldn't be the learning guide in his own department or group. The two roles cannot be integrated smoothly. However, the superior should definitely be “in the loop” with regard to the selection and implementation of learning causes and results.
- The questions regarding how to fill the role as a learning guide and the tasks in and beyond the team can be discussed most effectively after the learning guides-to-be have practiced to work with the methods. This also applies to the selection and preparation of learning causes and the implementation of results.
- The restriction of the work of a learning team to a concrete and comprehensive learning cause is important for two reasons:
  - The time frame for the work of the learning team should be limited for the benefit of the participants
  - The result ought to be implementable and its impact should be understandable to the actors involved.

*SOLOS goes Europe*

*The simple methods trigger the learning team's creativity*

*If necessary, 'board material' is sufficient for visualization*

*Take photos of the learning team's work*

*Someone's direct superior is not a good learning guide*

*Learning guide training: most successful through learning by doing*

*The more concrete a learning cause, the better its chances of success*

## **What's left to be done**

Even if the basics for the application of SOLOS are available and a number of companies are already working with it, there are still a few open points. First and foremost, more experience ought to be made with regard to how the work with and of learning teams can become routine in companies applying the model. To put it differently: The more naturally the organizational culture allows for the work of learning teams in different areas and contexts, the more achievable the actual effect of the work with SOLOS – competence learning.

Learning guides have a very difficult task, this should be conceivable from what was depicted so far. To restrict this task to a small number of people could be critical. The work with SOLOS requires a certain amount of time as well as exchange of experience and mutual support in the work as learning guides. The necessary time frame for this is difficult to determine. This is the reason why the success of SOLOS will ultimately depend on the allocation of time and organizational framework for the competence development and competence learning of employees. It has been shown that these tasks fall in the area of influence of management, i.e. the allocation of resources and securing the implementation of results.

All actors involved are aware that with regard to the aims and the experience gained so far the work with SOLOS is to be understood as a dynamic process and it is to be tested what works in the own company. This requires the willingness to commit from all actors and also the courage to try out new things and see how they work out. But isn't this what innovation is about?

*Turning the work with SOLOS into normality*

*Ensuring the right framework conditions for the work of learning guides*

*The work of learning guides and learning teams: innovative development of the organisational culture*