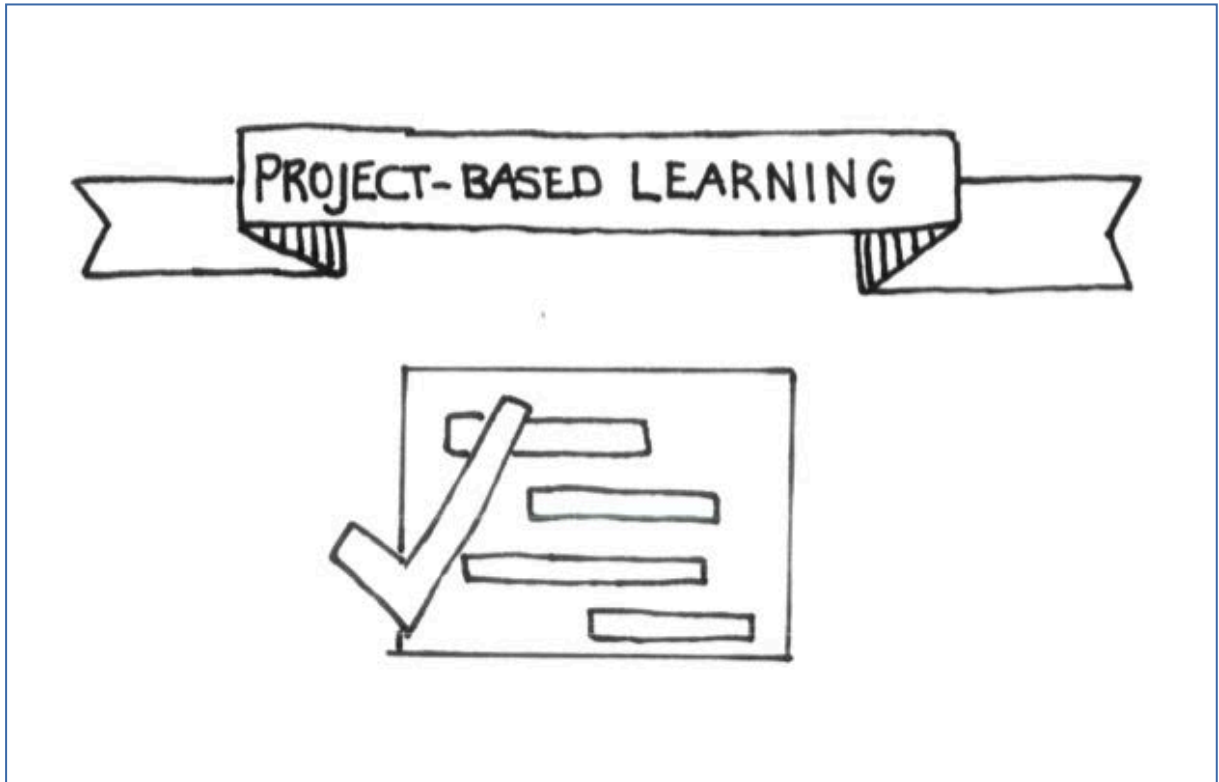




# TACIT Teaching Materials



By

Dr. Claudia Lehmann (HHL Leipzig Graduate School of Management)  
Tim Mosig (HHL Leipzig Graduate School of Management)

Leipzig, 2018



These notes are to accompany the Executive Briefing on Project-Based Learning (PBL) which forms part of the TACIT programme. They are designed for teachers and coaches to use to help structure a workshop based on the approach. Our intention is that they become the basis for an on-going development of learning resources around the topic and so feedback, elaboration, configuration, addition, etc. would be welcomed.

The default assumption in the design of this workshop is for a 1-day session with an extensive opportunity for interaction and practice on the part of participants.

In addition to the workshop structure, there are other learning resources; our intention again is to build a library of these to support delivery of various different kinds of teaching/coaching input based on this technique.



## Table of Contents

|   |    |
|---|----|
| Module content, aims, and objectives  | 3  |
| Roadmap of the workshop   | 5  |
| Learning resources  | 10 |
| <b>Handout #1:</b> 1. What can PBL do for organisational innovation challenges? | 11 |
| 2. Using PBL techniques in teaching and coaching innovation (TCI)               | 12 |
| 3. Using PBL for TCI  | 13 |
| 3.1 Teambuilding  | 13 |
| 3.2 Skill Development   | 15 |
| <b>Handout #2:</b> 3.3 PBL process  | 16 |
| <b>Handout #3:</b> 4. Resources to help develop TCI skills in PBL               | 19 |
| <b>Handout #4:</b> Deeper dives and reference/resource materials                | 20 |
| Acknowledgement   | 20 |



## Project-Based Learning

**Workshop size:** ideally 15-20 participants to be divided into 4-5 groups

**Location:** number of groups = number of group tables

**Facilitators:** 1-2 trainers

### Content

As a project manager, a primary objective is to achieve project goals. That sounds simple enough at first glance. Project-based learning helps the students to plan, coordinate, and control the complex and diverse activities of modern industrial and commercial projects. All projects share one common characteristic - the projection of ideas and activities into new endeavours.

During the workshop, the participants will learn about the importance of a structured project setting and how crucial it is for an effective project execution as well as a transparent and fair evaluation of the final outcomes. There are core elements framing a project as for example resource allocation, skill development, and evaluation of results. By using a project design plan, the participants will discuss about what resources do they need for a potential project, will think about what kind of skills and competencies they have to develop during the project to ensure the desired outcomes, and set the evaluation criteria beforehand to ensure a fair and transparent assessment of the outcomes.

Furthermore, team building is another essential factor in deciding about the success or failure of projects. During the workshop, the participants will learn about different types of group members, potential and effective group compositions, and phases of team building. But not always a well-composed group leads to a successful project. In the workshop, the participants will also learn about the power of failures and that it is also okay to fail and what they can learn from it. Therefore, real-world examples will be provided.

Finally, the participants will learn and understand more about the importance of finding, understanding, and elaborating a potential problem or challenge for a project. Therefore, they need to execute these to get a profound insight into either self-chosen or given a problem.



## Educational Objectives

After successfully completing this course, the students will have acquired the following learning outcomes:

### Knowledge / Understanding:

#### *Participants:*

- will know about as well as understand the different elements crucial to an effective project design (plan)
- will understand the importance of a critical discussion on the problem targeted by a project
- will understand the importance of the right team sets for a project

### Abilities / Skills:

#### *Participants:*

- will analyse them themselves to identify different types of team members
- will form a project team according to the previously identified types for an effective project execution
- will develop their own project plan
- will critically discuss potential problems/challenges used for the project and elaborate the topic in depth by own research

### Competencies:

#### *Participants:*

- will be enabled to present a critically reflected and content-wise elaborated challenge for a project
- will be enabled to form a team according to different types of potential teams members crucial for a successful group set-up
- will be enabled to set up a project design plan for an effective project considered crucial elements to be considered before, during, and after the project



## Roadmap of the workshop



1. Introduction and warm-up exercise
2. Objectives of PBL
3. Teambuilding

Break

4. Skill development
5. Competence map
6. Practical examples of failing with innovation

Break

7. Introduction into the PBL simulations topic
8. PBL simulation

Break

9. PBL simulation (cont.)
10. Presentation of results

Break

11. Reflection and discussion



## Exemplary Task Description and Workshop Set-up for PBL Simulation

In a one-day PBL simulation the method cannot be practised as it should be. Still, participants can experience the most relevant steps and structure of the approach. Preparing such a simulation, different from the actual approach, the manager/facilitator not just comes up with the topic or challenge but also with the driving questions for the teams.

In this exemplary description, we take the topic of *Organizational Climate* and ask the question to the project teams 'How to create an organizational climate fostering innovation?'.

In the following, the teams go through each of the following steps which are presented by the facilitator one after another. So, just after one step is realized by the project team(s) the next step is explained. The material mentioned in the task description is mentioned again in the next section and already shown partly by a picture at the particular step.

### A. Identify

*Individual task*

**Identify**

**Think about your company's culture and the role of innovation within.**

What are obstacles you are experiencing within your company when it comes to innovation (topics/projects).

**Write them down on the moderation cards – each problem one card.**





## B. Design

Group discussion

**Design**

What could be indicators to effectively evaluate the success of a cultural change towards a proper innovation culture?

**Write them down on the moderation cards – each indicator one card.**



## C. Plan

Group discussion

**Plan**

Name six departments to be involved into the development of an innovation culture.

**Write them down on the moderation cards – each department one card.**






**D. Build**

*Group discussion*

**Build**

**Six Hats Method – for Critical Thinking:**  
Each team member is representing one of the previously defined departments. Take their perspective and discuss.

*Come up with a story.*




*Group task*

**Build**

**Story development – for Teamwork & Collaboration:**  
Visualize your story using the material provided.

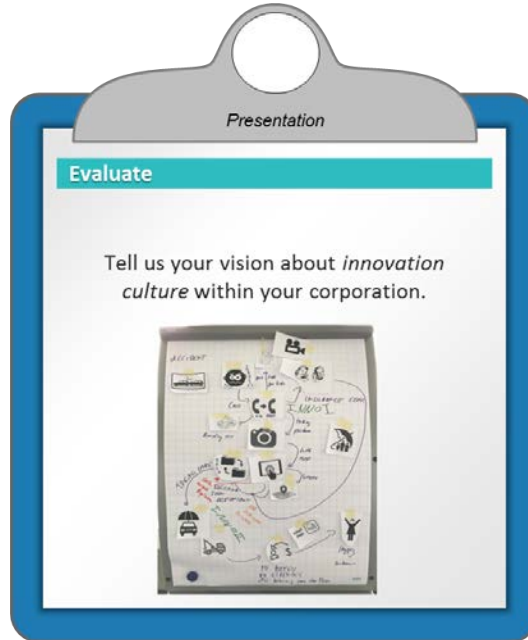
*Show us your story.*








## E. Evaluate





## Resources to support the delivery

Materials required:

| Type                                       | Quantity            | Purpose/location                          |
|--|---------------------|---|
| Moderation cards (different colours)       | 30 x # of teams     | Distributed on the tables, 30 per team    |
| Pens (different colours)                   | 4 x # of teams      | Distributed on the tables, 4 per team     |
| Round moderation cards (different colours) | 30-40 x # of teams  | Distributed on the tables, 30-40 per team |
| Flip chart paper                           | 2 x # of teams      | Distributed on the tables, 2 per team     |
| Tape                                       | 1 roll x # of teams | Distributed on the tables, 1 per team     |
| Scissors                                   | 1 x # of teams      | Distributed on the tables, 1 per team     |

### Slide sets

*Although sample slide sets are available as part of the supporting resources workshop leaders may wish to present the material in different ways, using different media or their own slide sets. These can be distributed during the session or sent beforehand to allow participants to prepare.*

1. What can PBL do for organizational innovation challenges? *(for all participants)*  
→ **Handout #1**
2. Using PBL techniques in teaching and coaching innovation *(for facilitators)*
3. Using PBL for TCI
  - 3.1. Teambuilding *(for facilitators)*
  - 3.2. Skill development *(for facilitators)*
  - 3.3. PBL Process *(for facilitators & participants)* → **Handout #2**
4. Resources to help develop TCI skills in PBL *(for facilitators & participants)* → **Handout #3**
5. Deeper dives and reference/resource materials *(for facilitators & participants)*



→ Handout #4

## Handout #1



### 1. What can PBL do for organisational innovation challenges?

During the last years, innovation gains increasing attention in corporations and a rising number of firms set up own innovation departments. Nevertheless, there are several challenges those departments face. On the one hand, some of these departments tend to be rather a decoration than a serious attempt to innovate processes, services, or products for example. Often, those innovation departments or initiatives are just used for marketing purposes or to show stakeholders that the management boards 'does' something for being innovative. On the other hand, those departments often lack resources. Companies want to be innovative and want to do something for innovation but on low or even no costs.

Still, there are simple techniques and ways to use existing processes or projects and increase their potential outputs in terms of innovation and creativity on two sides – for the company and also for the employees. Innovation challenges often fail too late and at a time a company already has spent a lot of resources on it. Another main reason for failure is communication. Therefore, team building and skill development are essential to mitigate these risks. PBL offers ways, if seriously and carefully planned and executed, to minimize the risk of failure due to its focus on team building, skill development in the team as well as for the individual, and a structured process during which the project team members can work on and test the idea regularly. Another important aspect characterizing PBL is that the projects are executed almost autonomously by the teams and just during agreed milestones interim or final results are reported to responsible managers or other hierarchy levels.

As mentioned, also skill development is an essential element in PBL. Thereby, the kind of skills to be developed can be chosen by the project team itself. Still, there are some core skills which are inherent to the method and which should always be considered during projects realized by using the PBL method. Those skills are communication, collaboration, work ethic, research, and critical thinking. Especially, the last two are of special interest and should be explained a bit more in details. Research as a skill seems to be important due to the correctness of information taken into account for realizing the project goals as well as for reflecting the information available in a critical way. This means not just take the information as they are but also critically reflect their correctness which explains the skill of critical thinking and its importance by considering also different perspectives.

To sum up, we can find PBL as a method offering a wide space of topics to be handled with it in the context of innovation and others. Within PBL different other tools and techniques can be used to achieve the desired targets. Thereby, PBL could be understood as the bracket around all other methods of the TACIT project and beyond which could be used during a PBL



project. Hence, PBL can help to teach and coach innovation because:

- almost all potential topics and challenges can be used to solve them by using PBL
- the design of the project is highly flexible and individual depending on the topic or challenge, the desired type of outcome, and the way the project team wants to design the project
- fosters collaboration by which team members can learn from each other
- enable team members to learn a predefined set of skills throughout the project
- provide a high degree of independence from the higher management levels during the realization of the project except for the predefined milestones for presenting interim and final results
- assigns responsibility to each team member, so that everyone is involved and the free-riding effect is mitigated
- foster cross-divisional collaboration depending on the project topic and design
- realizes projects in a structured way.

## 2. Using PBL techniques in teaching and coaching innovation (TCI)

Taking the long list of featured above it becomes obvious that PBL can be a powerful tool for teachers and coaches, especially in the context of innovation. The method has proven its potential already in scholastic teaching due to its origin. PBL roots in middle and high school education predominately in the United States. By using the method students are encouraged to take responsibility for a topic in a team and negotiate internally about the way to realize the projects and to discuss which outcome they want to achieve in the end. By doing so, for example, the responsibilities are assigned, milestones are terminated, resourced needed are identified, and information resources are determined. In the end, students got a much deeper insight, understanding, and knowledge about a particular topic than with a classical learning approach. Furthermore, self-esteem among the students is recognizable high by being proud of the results achieved which of course is a motivation factor. The teacher has rather the task of guiding students through the process and to get presented the interim as well as the final results.



All this, of course, is transferable to academic and practical setups. Still, especially in the practical context complexity is recognizable higher for realizing projects. Thereby, also other departments need to be taken into account either for information or also for collaboration in terms of customer feedback, prototyping, IT infrastructure, and so on. As mentioned earlier also skill development is a key factor for PBL. In the scholastic context of PBL, the teacher determines the skills to be developed by the students. In a practical setup, this task is assigned either to the superordinate manager or to the team itself to discuss which skills they perceive as important to realize the project as well as which skills can be most useful in their regular working context and environment.

In the end, PBL has proven to be applicable to both, academic as well as practical contexts. Just the preparation and the project design might differ. Due to the high flexibility and space for designing the project in a creative and independent way it is still important to balance two aspects: 1) keep the focus and 2) leave sufficient space for creativity and innovation during the preparation as well as the execution of the project for the teams. The work in the TACIT project suggests the use of the method as a bracket, as mentioned earlier, to take the structure of the PBL method and to use different other methods throughout the project itself for different purposed, stages of work, and targets to be reached.

### 3. Using PBL for TCI

#### 3.1 Teambuilding

Teambuilding is an essential part of every project. Without a well functioning team, every project is most likely to fail. This contains also communication. Especially in a corporate context, project teams often consist of people from different departments, with a different background, who may do not each other yet. Therefore, in the beginning, teambuilding exercises and activity can be helpful to get to know each other as a person, the way the other people work, and where their strengths and weaknesses are. The latter is of the highest importance also for the project design phase due to the need of assigning roles to the individual team members. Using the strengths of each can raise the probability of finishing the project successfully. In the following, there are four suggestions of potential teambuilding exercises:



## A. Game of Possibilities

**Time:** 5-6 minutes

**Number of Participants:** One or multiple small groups

**Tools Needed:** Any random objects

**Objective:** This team building exercise inspires creativity and individual innovation.

**Rules:** This is a great 5-minute team building game. Give an object to one person in each group. One at a time, someone has to go up in front of the group and demonstrate a use for that object. The rest of the team must guess what the player is demonstrating. The demonstrator cannot speak, and demonstrations must be original, possibly wacky ideas.

## B. Truth and Lies

**Time:** 10 - 15 minutes

**Number of Participants:** Five or more people

**Tools Needed:** None

**Objective:** This is a great ice breaker game, especially for new teams. Helps eliminate snap judgements of colleagues, and gives introverts an equal chance to share some facts about themselves.

**Rules:** Sit everyone in a circle facing each other. Have each person come up with three facts about themselves and one lie. The lie should be realistic instead of extravagant. Go around the circle and have each person state the three facts and a lie in a random order, without revealing which is the lie. After someone shares, the others must guess which is the lie.

## C. The Perfect Square

**Time:** 15 - 30 minutes

**Number of Participants:** 5 - 20 people

**Tools Needed:** Long piece of rope tied together and a blindfold for each person

**Objective:** Focuses on strong communication and leadership skills. By instructing some team members to be silent, this game also requires an element of trust across the team, allowing team members to guide each other in the right direction

**Rules:** Have your co-workers stand in a circle holding a piece of the rope. Then instruct everyone to put on their blindfold and set the rope on the floor. Have everyone take walk a short distance away from the circle. Next, ask everyone to come back and try to form a square with the rope without removing their blindfolds. Set a time limit to make it more competitive. To make it even more difficult, instruct some team members to stay silent.

## D. This is Better Than That

**Time:** 15 - 20 minutes

**Number of Participants:** Any

**Tools Needed:** Four or more objects

**Objective:** This exercise inspires team creativity in problem solving. The idea is to not make the scenarios too easy so it becomes obvious which objects are most useful.



### 3.2 Skill development

**Rules:** Pick four or more objects that are different (or the same objects that look different). Split all your participants into even teams. Describe a scenario where each team has to solve a problem using only those objects. This can be anything from "You're stranded on a desert island" to "You're saving the world from Godzilla!" Have each team rank the objects based on their usefulness in that specific scenario, along with their reasoning.

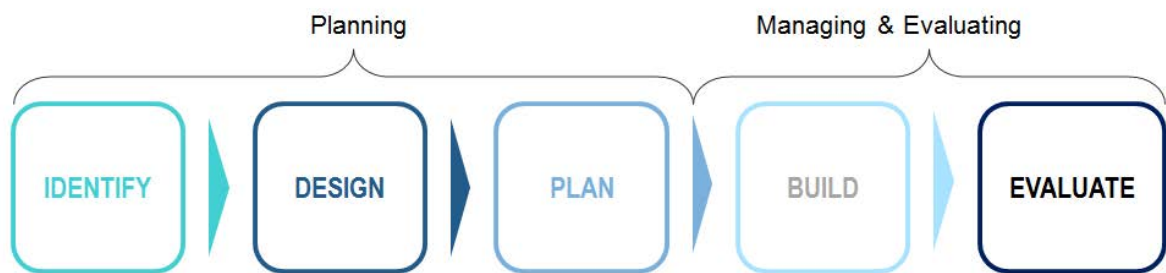
Employees and people, in general, bring a variety of skills along with qualifications and abilities. In this context today, often the term competency is focused. Especially in our today's world, it is a great challenge to develop those competencies due to the rapidity of change (globalization, shortened product lifecycles,...). As a company and project manager, it is one of the main tasks to assist individuals in developing their skills. But what are the competencies? Competencies are the knowledge and skills that are used to solve problems. Also, it is what a person really knows and all the abilities, knowledge and thinking methods that a person acquires in his or her life. There are tools used in practice to map competencies within organizations. For example, there are competence maps for gaining an overview of the existing knowledge in the company with the respective competence holders. Relevant fields of competence are identified in the company and employees with competencies in this field are assigned to this competence. It can be used as a central tool throughout the organization. It can be used to identify which persons within a team, an organization, or in the external environment can contribute important competencies to corresponding problems. The task of competence management: describing, transferring, using and developing competencies and ensuring their transparency. In this regard, competency management means to relate competences to actions in certain tasks and situations and to differentiate them by levels of competence. Furthermore, it is possible to make measurements on target and actual and corresponding development measures, taking into account the organizational context. Finally, the goal is to recognize and use potentials as well as expanding competencies and align them to individual development goals.



## Handout #2

### 3.3 PBL process

Even if PBL is a rather flexible and independent approach for team and project members do realize a project, there are different phases to be considered.



#### A. Identify

The first step is about identifying a problem, a challenge, or a task. Thereby, the topic, question, or challenge to be solved should be formulated in a way that there is sufficient room for creativity and innovation while developing the solution. Too narrow formulated tasks are rather hindering for the process.

The challenge can be given a superordinate manager, which then is the base for the question or task the project team comes up with. The question itself needs to be formulated already by the project team itself because this is part of the method and the independence as an inherent characteristic of the approach. Important is also, that the driving question for the project is formulated in a need and in the best case even customer need oriented way to from the beginning on work customer-centric.







### **B. Design**

In the design stage, the project team has to create and prepare a project concept proposal. This proposal includes resources necessary, departments which have to be contacted or included in the project, a timeline including also milestones for the presentation of interim or final results, budget planning, which skills can be developed by using which method, in which form the final results are presented (concept, presentation, prototype,...), and one of the most important aspects evaluation criteria. The team itself identifies evaluation criteria based on which they and the project outcome are evaluated on. The project concept proposal is then presented to the superordinate manager.



### **C. Plan**

After the project is designed, the planning phase started during which the project plan gets more details. The project team starts to assign particular tasks to the individual team members or sub-groups of members within the team. According to that also the schedule is getting more detailed, especially for internal use that everyone knows due to what time results and interim results need to be delivered. Then the team also tries to identify the exact information they need from which 3<sup>rd</sup> party within or outside the company to align this with the overall workstream of the project. All this is again summarized in an internal project plan used by the team throughout the project.



**D. Build**

With the fourth step, the project team using the PBL method is leaving the planning stages and enters the managing and evaluation phase. During the build phase, the project is executed and realized according to the plan the project team set up and agreed on before. Thereby, different other methods can and should be used to solve different task for and reach interims stages throughout the project. Hence, also skill development needs to be taken into account during that stage. Also, presentations of interim results at milestone meetings with the superordinate manager take place in that phase as well as the final presentation in the end.



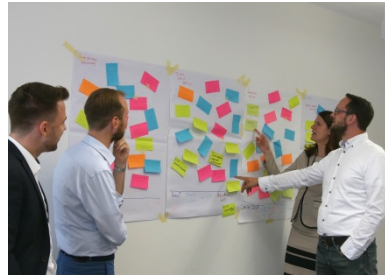
**E. Evaluation**

In the last phase, the evaluation stage, the project outcome is evaluated by the superordinate manager according to the criteria the project team itself agreed on while designing the project. The evaluation is also reflected together with the project team and each team member individually. The latter is necessary due to the individual skill development which sometimes also has some legal implications whereby topic like individual skills development are just allowed to be discussed with the person itself and alone.

The learnings gained from the projects, what went well and what not, should, of course,



be transferred to the next project.



## Handout #3

### 4. Resources to help develop TCI skills in PBL

PBL is a project management and project execution tool and technique. Still, the method itself should not be seen and used as a stand-alone approach but rather in combination with other methods which are useful while realizing the project and reaching the desired outcome. Nevertheless part of planning the project is highly important because it also includes other methods to be used throughout the project. There are templates which can be used for planning a project as well as adapted for own needs and specifics of a project.

| Project Schedule |  |             |        |        |        |
|------------------|--|-------------|--------|--------|--------|
| Month            | Sub-Goal/ Target Team Member/ Department | Time Frame: |        |        |        |
|                  |  | Week 1      | Week 2 | Week 3 | Week 4 |
| Jun              |  |             |        |        |        |
| Jul              |  |             |        |        |        |
| Aug              |  |             |        |        |        |
| Sep              |  |             |        |        |        |
| Oct              |  |             |        |        |        |
| Nov              |  |             |        |        |        |
| Dec              |  |             |        |        |        |



| Project Design Overview                    |               |               |          |
|--|---------------|---------------|----------|
| Project Name:                              |               | Duration:     |          |
| Department:                                |               | Project Lead: | Group:   |
| Driving Question:                          |               |               |          |
| Other Departments / Stakeholders Involved: |               |               |          |
| Success Skills & Methods to be Used:       |               |               |          |
|  |               |               |          |
| Project Description:                       |               |               |          |
| Starting Event:                            |               |               |          |
| Projects Outcomes:                         | Individual:   |               | Content: |
|  | Team/company: |               | Skills:  |

|  |  |  |  |
|--|--|--|--|
| Implementation/<br>Rollout in the Company: |  |  |  |
| Resources Needed:                          | On-site People & Facilities:               |  |  |
|  | Equipment:                                 |  |  |
|  | Materials:                                 |  |  |
|  | Community Resources/<br>Other Departments: |  |  |
| Success Assessment<br>Criteria:            |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Notes:                                     |  |  |  |

## Handout #4



## 5. Deeper dives and reference/resource materials

To help work with PBL further we have begun to assemble a library of resources – please click on the links for more on any of these.

[TACIT project teaching support materials](#) – materials designed to help run an experiential workshop on using PBL in teaching and coaching innovation. Includes exercises and useful background references.

*Further readings which should help to understand and apply the method:*

Marx, R. W., Blumenfeld, P. C., Krajcik, J. S., Blunk, M., Crawford, B., Kelley, B., & Meyer, K. M. (1994). Enacting project-based science: Experiences of four middle-grade teachers. *Elementary School Journal*, 94(5): p. 518.

Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist*, 26 (3 & 4), 369-398.

Lasauskiene, J., & Rauduvaite, A. (2015). Project-Based Learning at University: Teaching Experiences of Lecturers. *Procedia - Social and Behavioral Sciences*, 197, 788–792.

## Acknowledgement

Project-based learning is a part of EU Erasmus+ Knowledge Alliance TACIT project EAC/A04/2014, application: 562459-EPP-1-2015-1-UK-EPPKA2-KA. This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.