



# Core Curriculum Project Management

---

**PIA<sup>2</sup>**  
PROJECT

Vocational training courses for VET systems

Created within the framework of the EU-project

"Project management as an instrument with reference to work environment for development and assurance of education quality in vocational education (PIA2)"

The curriculum was developed on behalf of the Senator for Education, Science and Health, Rembertiring 8-12, 28195 Bremen

State Institute for Schools, Department No. 2 – Quality assurance and promotion of innovation, Am Weidedamm 20, 28215 Bremen

Edited by: Jürgen Uhlig-Schoenian

Collaboration: Anja-Christina Hinrichs

Version: July 2014

## Table of contents

<b>1</b>	<b>Foreword</b>	<b>5</b>
<b>2</b>	<b>Objectives, contents and indications (Modules 1 - 5)</b>	<b>8</b>

## Foreword

The function of the core curriculum "Project Management for vocational training courses for VET schools" is the implementation of integrated, activity-based teaching concepts in form of multidisciplinary projects (which may include elective subjects as well as general educational subjects). "Project-based teaching in combination with the execution of a real team project contributes significantly to the achievement of the desired academic ability. This is achieved through preparatory instruction for solving complex professional and scientific-based problems with the help of self-reliant responsible action based on professional foreknowledge. Project work not only fosters the achievement of professional competence and awareness of problems, it also develops attitudes and opinions that result in responsible actions within a community. In order to reach these challenging goals it is necessary for teachers to cooperate intensely on the basis of an annual didactic plan which incorporates regular exchange of methods, content and media, as well as common evaluation criteria."

The aim of the implementation of project management in the teaching syllabus is to guarantee the systematic achievement of methodological and social competences beyond subject boundaries on an interdisciplinary level. It is recommended to plan a minimum of 30 teaching lessons for project management.

As a basic principle, the implementation of the curriculum and the achievement of its goals should be realised with the help of various disciplines. Each school board responsible for educational programmes has to decide on the details, determining which subjects and learning areas should contribute to the implementation of the curriculum, determining which subject will be the main discipline of implementation and to what degree other subjects will contribute to the achievement of the curriculum's goals.

Among other reasons, project management is so widely used in the fields of economy, science and administration because it fosters goal-oriented, systematic action, team work, structured patterns of thinking and personal time management. Fundamentally project management is an interdisciplinary and integrated concept, in line with the modern conception of propaedeutic education. The different interests and areas of knowledge, as well as the communicative and motivational

competences and experiences of the learners are integrated into the educational process with the help of project-based learning and responsible task sharing. As a prerequisite to achieve this, both project manager and team members have to understand and value the different professional, social and personal competences of the team, using these resources in order to reach the project's goals. A special dimension of diversity is the perception of differences that arise due to cultural differences. Even if instruments of project management are internationally standardised, real project work is usually carried out in culture-specific environments that are based on different guidance systems which influence behaviour patterns. This may give place to massive conflicts for example in international teams. For this reason it is important to emphasize right from the beginning of the project (at the stage of team building) on the given cultural differences. The ultimate aim is to acquire intercultural competences, with other words the capacity to interact adequately and successfully with individuals or groups pertaining to different cultures. This capacity can be acquired at a young age or can be developed and encouraged during the process of socialisation with the help of intercultural learning. Working with people from different cultural backgrounds leads to the acceptance of their diversity and their specific concepts of cognition, way of thinking, sense and action. As a result, learners reflect upon prejudices and recognise their adherence to a specific culture, perceiving at the same time the existing limits of comprehension. Raising awareness of cultural differences always leads to the expansion of horizons and makes it possible to value different behaviour patterns, to analyse them and to solve international communication conflicts in a constructive and positive way.

Generally projects are characterised by a high degree of openness regarding process design and effective solution finding and presentation. Project management offers a solid structural background for efficient project work. Even so, it leaves much room for the learners to make individual decisions and design the process autonomously. In contrast to didactical teaching which is planned in every detail, the challenge of project-based learning lies particularly in trusting the students and assuming that they will be able to develop a plan on their own, as well as to identify and solve the project's tasks together as a team. This involves a change of perspective with regard to the role of teachers and the applied

methodical and didactical structure of teaching lessons. During project-based learning, subject contents are researched, chosen and used on a problem-related basis and therefore often do not coincide totally with the goals and contents of the given learning area or subject.

In the course of project-based learning teachers not only play the role of a coach or a learning guide by offering content-related and methodological support. In the absence of a real client teachers also assume the role of the client by representing him in front of the student team. Thanks to this fact it is possible for the students to be continually faced with the client's requests from the beginning on and during the whole course of the project. Another role of the teachers is to supervise the implementation of a correct balance between project-based and subject-oriented learning contents.

The five modules of the core curriculum together describe an approach of how to teach Project Management in an activity-based way in a chronological order. The curriculum contains not only preparatory and guiding elements, but also the core elements of project management: rough and detailed planning. The execution of a real project (module 4) is not included in the given time-frame, because the time needed for its execution may vary considerably depending on its complexity. After completing module 5, the teams of students should have the ability to plan, carry out and continuously document a project largely on their own.

The objectives of this curriculum are binding. The concepts listed in the section "Contents", which are to be found in the descriptions of the modules, refer to relevant documents and methodological aspects of project management. The lists of the concepts are not exhaustive and are meant to offer support for the agreement and formulation of the curriculum's objectives and may be supplemented and modified within the framework of the school's internal curriculum development.

The module-based structure of the curriculum makes it possible to take into account the different backgrounds/competences of the students and it allows flexibility with regard to the integration of various disciplines into the teaching process. For example, the preparatory elements described in module 1 can be substantially shortened if the team has already been formed. If there is no time to

carry out a real project than module 4 might be skipped. In this case the project presentation and the evaluation made at the end of the project will be carried out directly after the phase of "Detailed planning" (module 3). However, in the ideal case, the modules build on each other and structure the project work based on professional project management standards. Whatever the case, a brief feedback and reflection round has to be planned at the end of each module and carried out within the group and between the project teams. This serves for safeguarding provisional results and embedding the acquired methodological competences.

Considering the implementation of the core curriculum it can be said that it is not primarily focused on conveying knowledge through project management, but rather to motivate students by encouraging them to build up all those aptitudes, skills and attitudes that find their expression in project work. This procedure is in accordance with the concept of activity-oriented teaching that is not primarily focusing on the completeness of subject contents (in the sense of a canon of themes), but rather focuses on enquiry-based active learning based on the model of complete action (information, planning, decision-making, execution, control and evaluation). This is the reason why, as far as possible, a theoretical introduction to project management should be avoided. Instead, the opportunity of planning and execution of a real project should be used, which offers the possibility of experience-based learning. Above all, it is in this form of situated learning in which students can acquire the desired personal, social and methodological competences.

As a guideline for the largely self-organised planning of projects it is recommended using the publication of the State Institute for Schools in cooperation with the German Association of Project Management titled "Project Management: Setting the Standards". In the form of an example, this guideline uses a fictitious project request which might be used as a model for structuring any other specific project. After finishing the proposed project work students not only will have acquired knowledge about project management, but they will also be able to transpose the applied work steps and phases to other projects that need to be fulfilled. At the end of project work they will have gained knowledge about the most important documents used in project management and will have the ability to use them for each specific project.

**Objectives, contents and indications**

<b>Module 1</b>	<b>Learning time guideline</b> <b>8 hours</b>
<b>Project preparation</b>	

**Objectives**

- Be aware of the importance of project management with all its aspects of cultural differences and explain the reasons for its introduction into the teaching lessons.
- Be aware of the prerequisites and framework conditions of project-based teaching.
- Be aware of the possibilities and apply the methods of team building.
- Agree upon (and document) the rules regarding person-oriented and topic-oriented team cooperation.
- Be aware of and apply the rules of conducting/moderating project meetings.
- Know the phase models and the characteristics of the project phases.
- Document the work steps and the learning process in a project logbook/study journal.

**Contents**

- Project logbook
- Competences
- Team building
- Team rules
- Moderation
- Structures of communication
- Verbal and non-verbal communication
- Structures of interaction
- Line organisation
- Project organisation
- Hierarchy
- Position
- Role
- Status
- Leadership

**Indications**

Due to existing cultural differences, the following questions must be especially considered during PM-practice:

- What is the role of context within the structures of communication?
- What has to be expressed verbally?
- Which are the existing cultural differences with regard to verbal and non-verbal communication?
- How can misinterpretations be avoided?

- How can it be guaranteed that all the involved members understand the project's tasks and goals in the same way?
- What is the importance of social relationships and working atmosphere between the members of a project team?
- How can it be guaranteed that the project context/environment will not be altered/get lost during the process of communication?
- To what degree have culture-specific behaviours and culture-bound rules been observed?
- What are the hierarchies in which the project is contextually integrated? What is the hierarchy design within the project itself?
- Depending on the cultural context, how can hierarchy and authority be handled?
- Considering the background of cultural differences, have team roles and positions been clarified sufficiently?
- Are there cultural differences in leadership styles?
- Has the interaction of cultural, individual and situation-bound factors been taken into consideration sufficiently?
- Has the validity and the relativity of stereotypes been questioned?

<b>Module 2</b>	<b>Learning time guideline</b> <b>6 hours</b>
<b>Rough planning</b>	

**Objectives**

- Clarify project tasks and goals with the client (person who proposed the project) and take into account the cultural context of project work.
- Understand the starting point and define those problems which have to be solved with the help of the project.
- Define own objectives of the team with regard to the progress of learning.
- Identify the project's context and stakeholders (involved and affected persons).
- Describe the framework of the project.
- Assess the feasibility of the project.
- Gather first ideas for solving the project's problems.
- Establish the goals of the project based on the initial analysis.
- Differentiate between target results and results obtained during the process of execution.
- Determine the indicators for the achievement of the goals.
- Analyse the interests and preoccupations of the stakeholders, evaluate them and coordinate them with the project's goals.
- Define and visualise the phases of the project.
- Present the results obtained during rough planning.

**Contents**

- Analysis of the situation
- Clarification of project tasks
- Requirements Specification
- Project Management File (PMF)
- Report
- Information research
- Creativity techniques
- Goal matrix
- Phase plan
- Project charter
- Presentation

**Indications**

By clarifying the project's requirements/tasks the foundations of the project are set. Each successive phase of project management depends on the correct understanding of the project's tasks. Mistakes or misunderstandings that creep in at this first stage are very difficult to compensate for during the progress of the project and sometimes they can't be compensated for at all.

Different creativity techniques prove to be efficient for gathering problem-solving ideas

such as: brainstorming or brain-writing; the Osborn check list; morphological boxes and mind-mapping.

The introduction and practice of presentation techniques can often be assumed by other subject areas (e.g. German language lessons). This may significantly reduce the actual project work.

<p><b>Module 3</b></p> <p style="text-align: center;"><b>Detailed planning</b></p>	<p style="text-align: center;"><b>Learning time guideline 10 hours</b></p>
<p><b>Objectives</b></p> <p>Define the Work Packages and visualise them in form of a Work Breakdown Structure.          Determine responsibilities.          Define and assign the resources.          Appropriately consider and analyse project stakeholders.          Define the milestones and document the project's progress.          Determine rights and competences.          Establish the risks and carry out risk analysis and evaluation.          Describe the risk measures.          Present the planning of the project.</p>	
<p><b>Contents</b></p> <p>Work Breakdown Structure (WBS)          Description of Work Packages          Overall Project Schedule (OPS)          Bar chart          Milestone plan          Project organisation          Risk analysis          Risk portfolio          Risk measures          Project charter</p>	
<p><b>Indications</b></p> <p>Project management has to be included as a partial project into the WBS. Some of the typical Work Packages used in project management are: project controlling, project coordination, project marketing, project documentation, project close-out.          Generally the definition of responsibilities and resources in the WBS is only useful in case of a real project that will be carried out in practice.          To create the Overall Project Schedule it is recommended to using specific software applications. Apart from the well-known but very complex MS Project there are several open source programmes available, e.g.: OpenProj (<a href="http://openproj.org/">http://openproj.org/</a>) or GanttProject (<a href="http://ganttproject.biz/">http://ganttproject.biz/</a>).          In other cultural contexts the stage of detailed planning is often considerably shortened. This means that they do not always create an OPS and do not carry out an exhaustive risk analysis.</p>	

<p><b>Module 4</b></p> <p style="text-align: center;"><b>Project execution</b></p>	<p style="text-align: center;"><b>Learning time guideline -- hours</b></p>
<p><b>Objectives</b></p> <p>Put project planning into practice and organise the work of the team.          Document the distribution of tasks and the progress of their realisation.          Coordinate the progress of the project with the project plan, analyse possible deviations from the planning and apply corrections if necessary.          Make status reports.          Comply with the deadlines of the milestones.</p>	
<p><b>Contents</b></p> <p>Action plan          Reporting system          Project marketing          Project management/Project controlling          Conflict management</p>	
<p><b>Indications</b></p> <p>During the execution of the project, the project management of each team bears the responsibility to sufficiently inform every participant about the progress of the project. This can be done for example with the help of the common project logbook, but also through personal dialogue, meetings and presentations.</p> <p>Project marketing involves the internal and external presentation of a project. This includes:</p> <ul style="list-style-type: none"> <li>• a catchy project title;</li> <li>• the creation of a project logo;</li> <li>• a performance-based representation of the work progress;</li> <li>• submission of regular reports about the progress of the project in order to inform decision-makers/clients;</li> <li>• development of a project website, etc.</li> </ul> <p>Project controlling is one of the main tasks of the project manager during the realisation phase of a project. It means to foresee, at an early stage, possible deviations from the plan, identify the ones that have already occurred and react immediately to correct them.</p> <p>Another task of the project manager is to offer guidance and support for solving (cross-cultural) conflicts.</p> <p>Milestones represent an excellent opportunity for project controlling. During the definition of these intermediate results it is possible to critically review the accomplished project phases and steps and have the possibility of making the corresponding corrections in the project plan if necessary. All the participants/team members should attend the milestone-meetings!</p> <p>Excel tables are an efficient controlling-tool for small and middle-sized projects. In these tables it is possible to include and compare the target values and the actual</p>	

values. However, it is crucial to document the information correctly and update it continuously.

<b>Module 5</b>  <b>Project close-out and evaluation</b>	<b>Learning time guideline</b> <b>6 hours</b>
<b>Objectives</b> Create a Project Closure Report including information about the level of project goal achievement, problems and success factors during project planning and execution, as well as recommendations for carrying out future projects. Reflect on project planning and realisation and make their evaluation. Present the achieved project results.	
<b>Contents</b> Project results Project logbook Professional competence Social competence Methodological competence Competency grid Process evaluation Product evaluation Feedback	
<b>Indications</b> The project close-out should refer to at least the following questions: Has the time-frame and the budget been respected? Have the professional and content-related objectives been reached? Is the client pleased? How is the atmosphere within the project team? What went well? What went wrong? What should be done differently next time?	